The University of Chicago

AN ANALYSIS OF THE RETAIL TRADING RELATIONSHIPS OF ELGIN, ILLINOIS: A SATELLITE CITY

A PART OF A DISSERTATION SUBMITTED TO THE FACULTY OF THE SCHOOL OF BUSINESS IN CANDIDACY FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

1938

By

EATON VAN WERT READ

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PREFACE

FOR some years before the selection of the subject of this monograph—in the fall of 1936—the author was interested in the analysis of the flow of retail trade from hamlet, village, and town, to town and city. Experience in retail advertising and in selling to retailers in communities of various sizes, as well as commercial research in the marketing of consumers' goods, resulted in a decision to attack some phase of the geographical aspects of buying at retail.

A survey of retail-trading-area studies revealed that no significant attempts had been made to analyze in detail the complex of retail-trading interrelationships involved in the case of a trading center, itself of considerable size, which in turn was subject to the influence of a much larger city with great retail drawing-power.

Grateful acknowledgment is due to the many persons and firms who co-operated in furnishing information and in facilitating the collection of the mass of original data upon which this study is based. Especial thanks, however, are due to Messrs. Joseph C. Spiess and H. G. Lawrance, of Elgin. Mr. D. A. Revzan, research assistant in the School of Business of the University of Chicago, made many helpful suggestions, particularly in matters pertaining to tabular presentation and statistical analysis. Professors J. L. Palmer, E. A. Duddy, and A. W. Kornhauser of the same School have criticized the manuscript.

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CHAPTER I

INTRODUCTION

THE FLOW OF RETAIL TRADE

THE intercity flow of retail trade has been investigated from various viewpoints—economic, geographic, sociological, entrepreneurial—depending upon the interest of the individual or concern making general or local studies of retail buying. Whether the emphasis is placed upon relative price levels, transportation patterns, social intercourse, or economical selling and advertising, the central idea is that consumers do not always buy or obtain all the commodities and services they use and enjoy in their places of residence. This is obviously true of the modern farm, hamlet, and village family as all the goods and services they desire are not physically available at the smallest population centers. It is, however, readily observable that residents of the larger centers—the towns, cities, and metropolises—do not content themselves with trading solely where they live but move frequently from one urban center to another in their quest for merchandise and services that will satisfy their wants.

This monograph is particularly concerned with a special case of the flow of retail trade—that involved in a situation in which one shopping center, Elgin, Illinois, is located near one many times greater in size, Chicago. In general, the approach will be from three sides of a triangle: (1) the retail interrelationships of Elgin and its tributary area, (2) those of that area and Chicago, and (3) those of Elgin itself and Chicago.

This triangular concept is, it is realized, an oversimplification of the actual problem; perhaps a better idea can be obtained of the complexity of the situation by comparing it with the interplay of magnetic forces. The particles—consumers' dollars—which are to be studied are distributed in piles of varying sizes—cities, towns, villages, and the open country—upon a table. These particles are magnetized in varying degrees; the dollar particles used in pur-

chasing shopping goods are relatively highly magnetized; those for purchasing convenience goods are magnetized to a lesser degree.

Also distributed upon the table in an irregular pattern are magnets of different degrees of strength, i.e., shopping centers. The power of these various magnets is determined by many factors—number, type, and prestige of retail outlets in shopping lines, price levels and price ranges, service and amusement facilities, newspaper circulation, and many other considerations. One magnet is many times stronger than any of the others, but since the latter are fastened to the table—fixed in space—they are not themselves pulled to the huge magnet.

The table upon which the particles and magnets are distributed is not a perfectly smooth, frictionless surface; there are minute ridges and valleys representing differences in transportation facilities—highways, railways, and bus lines—and also differences in weather conditions which affect ease and comfort of travel.

If the magnets are thought of as being activated by electricity at a given moment, the system becomes dynamic and some of the particles are seen to fly toward one or another of the magnets in a most intricate pattern. Some of the particles are so weakly magnetized that they cling to their own magnet; others move in one direction or another, depending upon their own magnetization, the positions of the irregularities of the table (friction), and the strength of the various magnetic forces playing upon the particles. In other words, retail purchases are made in the different centers as a resultant of forces operating within the consumer, factors affecting his accessibility to various shopping centers, and the relative strength of attraction of those centers. Each of these major groups of factors is in turn divisible into many parts; some are tangible and some are intangible; some relatively stable and some highly unstable; some important and some unimportant.

In this dynamic system, however, neither the degree of magnetization of the particles, the frictional elements, nor the strength of the magnets remains constant through more than an infinitesimal moment of time because of the instability of some of the underlying factors. The changes are not all in the same direction, nor is the rate of change constant.

A simple illustration may clarify this analogy. A woman living in Crystal Lake, Illinois, enjoys some increase in income and the proportion of the dollars which she can spend on shopping goods is somewhat enlarged—some of the particles are more highly magnetized. She reads with more interest the advertisements in a Chicago daily newspaper and sees announcements of new styles at department stores and specialty shops in that city—the force of that magnet is strengthened.

However, her husband is using the family's own car; the early morning train for Chicago has left and taking the next one would materially reduce her shopping time in the city—the frictional element has increased; a ridge has appeared between the particles and the largest magnet. On the other hand, a friend of hers calls to say that she is driving to Elgin for a shopping trip and luncheon—a valley appears between the particles and another magnet. Perhaps in addition to the reduction of friction in this direction a new specialty shop has opened recently in Elgin—an increase in the power of the smaller magnet.

The woman asks her friend for a ride to Elgin, goes to that city and makes purchases; some of the particles move toward the Elgin magnet instead of clinging to the local one as they had before the change in their magnetization or instead of going toward Chicago as they might have if the change in the force of that magnet had not been accompanied by frictional changes and growth in the magnetism of Elgin. The illustration presented is still greatly simplified, and there are many forces present in the situation which have been neglected or assumed to remain constant which are actually highly operative and highly unstable. Some attempt will be made in the final chapter to classify and evaluate the elements of the total situation affecting buying decisions as they are seen by the investigator.

The plan of approach to this special problem of the flow of retail trade will be as follows: (1) a brief development of the satellite concept; (2) a sketch of the particular satellite and area under consideration; (3) a description of the methods employed and acknowledgment of limitations; (4) an analysis and interpretation of the data collected in the field investigation; and (5) a gen-

eral summary and some general conclusions as to the underlying factors influencing the observed pattern of retail trade.

THE SATELLITE CONCEPT

Retail trading centers have existed in this country since Colonial times, but gradually certain of these commercial centers began to leave their competitors behind because of various natural and acquired advantages. As one economic historian has expressed it:

> The towns that developed into metropolitan communities had to possess marked advantages over their fellows. Their situation had to be healthful not only for a small town population but for a larger group. . . . . Facilities for shipping are, of course, necessary . . . . for loading and unloading, for land as well as water transportation. Position between large groups of consumers and producers is vital for commercial growth and metropolitan economy. . . . . The aspiring town or city must possess a *hinterland*, a tributary adjacent territory, rich in natural resources occupied by a productive population and accessible by means of transportation.[1]

As these towns developed into metropolitan communities they passed through several phases: organization of a wholesale market, accelerated industrial development (other towns had a certain amount of industry), increased transportation facilities within the metropolis and connecting it with its hinterland, and, finally, a complex financial organization involving commercial and investment banking.[2]

While these metropolises were developing, some of the population centers which were too far removed to be enveloped by the physical expansion of the metropolitan community and thus reduced to the status of suburbs developed minor industrial structures of their own. Population grew in these smaller cities and, in some cases, suburbs arose around them. More commercial facilities developed to serve the increased population, and this led to an absolute increase in the size of the area from which the city drew retail trade. This rate of increase, however, was less than that of the metropolis, resulting in enclavement of the retail trading area

[1] N. S. B. Gras, *An Introduction to Economic History* (New York: Harper & Bros., 1922), pp. 186–87.

[2] *Ibid.*, chap. v, *passim.*

of the smaller city within that of the metropolis with regard to high-value, infrequently purchased, shopping and specialty goods.[3]

As a sociologist has put it: "The metropolitan community, therefore, comprises a cluster or constellation of centers. Smaller cities and towns tend to group themselves around larger ones somewhat as planets group themselves around a sun."[4] The constellation concept drawn from the astronomical field by the sociologist provides a usable name for certain of the cities surrounding the metropolis, i.e., satellites.[5] Graham Romeyn Taylor in 1915 apparently first used the term and applied it to industrial suburbs: "Towns made to order entirely or with some little village as a core, snatch bundles of papers from the morning trains."[6]

The Taylor and Purdom concepts are not in accord with the usage in this thesis.[7] Satellite city is used here to denote those

[3] "Shopping goods—those consumer's goods which the customer characteristically compares on such basis as suitability, quality, price and style"; "Specialty goods, those particular consumer's goods on which a typical buyer characteristically insists and for which he is willing to make a special purchasing effort" (Committee on Definitions, National Association of Marketing Teachers, "Definitions of Marketing Terms," *National Marketing Review*, I, No. 2 [1935], 163).

[4] R. D. McKenzie, *The Metropolitan Community* (New York: McGraw-Hill Book Co., Inc., 1933), p. 71.

[5] "Satellite" is used by McKenzie without definition, occasionally as synonymous with "suburb." Park and Newcomb in their chapter (*ibid.*, chap. vii) on "Newspaper Circulations and Metropolitan Regions" also use the term without definition and sometimes as meaning the same as suburb (*ibid.*, p. 100). However, they implicitly distinguish between suburbs and satellites by listing as the latter only the outlying cities publishing daily newspapers (Table 41, p. 103) and later exclude one of those, Evanston, on the bases of immediate proximity to Chicago and residential character (p. 104).

[6] *Satellite Cities: A Study of Industrial Suburbs* (New York: D. Appleton, 1915), p. 1; see also G. M. Purdom, *The Building of Satellite Towns* (London: I. M. Dent Sons, Ltd., 1935), p. 25. Purdom himself defines the term as a "distinct civic unit . . . . possessing the economic, social, cultural characteristics of a town in these times and while still maintaining its own identity [being] in some sort of relation of dependence upon a great city [not] a suburb or any form of comunity which is absorbed, or in process of absorption into another community" (p. 26). Yet throughout the book he uses the term as synonymous with "garden city" or purposely planned separate community.

[7] Dr. McGarry of the University of Buffalo employed the term in 1932 (see p. 9, n. 21).

smaller population centers clustered around a metropolis which dominate retail trading areas of their own but are in turn dominated (along with their areas) by the metropolitan center.[8]

DISTINCTION BETWEEN THE SATELLITE AND THE INDEPENDENT TRADING CENTER

The retail satellite must be distinguished from independent trading centers of comparable population and from suburbs of the metropolis. The first of these distinctions is fairly easy to make, the second is more difficult. Like the independent trading center, the satellite has had an independent genesis. It has grown from its own nucleus of a village and developed into a commercial and industrial city of some importance. It has its own civic life and consciousness and a fairly complete retail structure comprising many types of establishments, including narrow-line and department stores. However, because of geographic proximity to a much greater center, some of the townspeople of the satellite and some of the residents of its tributary area make shopping trips to the metropolis which they can reach in one or two hours by automobile, bus, or train a few times each year or more frequently. This may have a certain adverse effect upon the retail plant of the satellite so far as shopping, and to a lesser extent specialty, goods are concerned. Thus the psychological attitude of expecting wider selection and lower price in the metropolis may eventually lead to actual weakness of the satellite's stores in certain commodity lines.

Unlike the independent trading center of comparable size, the satellite, besides competing with other satellites and nonsatellites in its fringe or overlapping territories in three directions, must

[8] The complex of relationships may be extended downward at least one more step, e.g., the trading area of a town of 5,000 may be an enclave within that of a city of 40,000, which larger territory is in turn completely engulfed by the retail zone of a metropolis of 3,000,000. This might be thought of as enclavement to the second power. Higher powers are possible as in this sequence: Johnsburg, Ill. (population 504), is five miles from Woodstock (5,471), which is twenty-two miles from Elgin (35,929), which is thirty-eight miles from Chicago. This idea might, of course, be theoretically extended to New York and even to Paris for the wife of the wealthy retired businessman operating a gentleman's farm near Johnsburg. Second- and third-power enclavements are shown clearly in a trading-area map of the United States based upon newspaper circulation published by the Hagstrom Co. of New York in 1936.

in a sense compete with the metropolis throughout most of its trade area.[9] Thus this retail domination is the main criterion for distinguishing a satellite, as the term is here used, from an independent trading center. Two measures for testing satellite status from this angle—shopping-trip time and newspaper circulation—have been selected by the author. The first is largely geographic and the second sociological, but both are believed to have definite commercial implications.

If the residents of a trading center and its tributary area can reach a city of many times the size of the former, shop for a few hours and return to their homes comfortably in one day, it seems there is prima facie evidence of satellite relationship. This shopping-time factor is a resultant of transportation facilities, such as highways, steam and electric railways, and bus lines, climate, topography, and the psychological attitude toward distance prevailing in a given section of the country. In the Middle West sixty to seventy miles, or a round trip of from one hundred and twenty to one hundred and fifty miles, would seem to be the maximum distance.[10]

The second measure suggested for determining satellite status is applied by tracing the sources of daily newspapers circulated in the satellite and the territory surrounding it.[11] If it is found that a significantly large proportion of the daily newspapers going into the smaller city and its area emanate from the metropolis, there would seem to be confirmation of the satellite-status hypothesis based on the shopping-time criterion. It indicates an interest in the metropolis and exposure to the advertising of its retail stores.[12]

[9] This is a general discussion; to what extent this is true in light of the field investigation will be analyzed in a later chapter.

[10] Based on personal interviews by the author in towns in northeastern Illinois. In perhaps nine out of ten American homes the housewife is responsible for the preparation of the meals and this puts a definite limit uopn the total amount of time away from home in a given day, say from 9:00 A.M. to 5:00 P.M.

[11] This technique is based on Park and Newcomb in McKenzie, *loc. cit.*, although they give percentages for the smaller city only, not for its area.

[12] The author cannot say just how large this proportion should be to indicate satellite status as his investigation had to do primarily with only one satellite: Elgin, Ill. Circulation figures for that city and its area are given in Table 19. Robert Ezra Park found the following percentages of total circulation coming from

DISTINCTION BETWEEN THE SATELLITE AND THE SUBURB

The difference between a satellite city and a suburb is more difficult to describe, but the author submits five criteria which it is believed will prove useful in attacking the problem: one geographic, two sociological, one historical, and one economic.

In general, satellite cities are farther from their central city (metropolis) in absolute distance and in traveling time than are the suburbs of that same city.[13]

Closely connected with this standard is the sociological one of population pattern. Typically the satellite is separated from its central city by valleys in population density, which frequently are below the 150-per-square-mile metropolitan-district test of the United States Bureau of the Census.[14] Suburbs, on the other hand, are merely extensions of the metropolis with an urban population density.

The third test, again sociological, is newspaper circulation. Although many suburbs have weeklies, few support their own daily newspapers, and in such cases the circulation of the suburban daily is relatively unimportant.[15] A satellite has a daily of its own, and within the city that paper enjoys a large proportion of the total daily circulation.[16] In addition to this, the local daily of a satellite has a considerable circulation in the area outside the city itself, indicating the existence of a retail trading area of its own.[17]

Chicago for these cities in 1928: Aurora, Ill., 40; Elgin, 46; Joliet 45 ("Urbanization as Measured by Newspaper Circulation," *American Journal of Sociology*, XXXV, No. 1 [July 1929], 67). Figures for the respective trade areas would vary from town to town.

[13] However, a satellite of, say, St. Louis may be no farther from that city than a suburb of New York or Chicago is from its metropolis.

[14] *Fifteenth Census of the United States, 1930: Metropolitan Districts* (Washington: Government Printing Office, 1932), pp. 5–6.

[15] Only ten out of sixty suburbs of ten of the country's largest cities had daily newspapers in 1937 (*Directory of Newspapers and Periodicals* [Philadelphia: N. W. Ayer & Sons, Inc., 1938]).

[16] Again no absolute figure can be given, but probably 40 per cent or more could be used as a bench-mark (see p. 7, n. 12, above). Subtraction of Aurora, Elgin, and Joliet percentages (Chicago papers) given there from 100 leaves 60, 54, and 55 per cent, respectively, as proportion of local paper's circulation.

[17] Cf. Table 19.

The historical standard suggested is that of independent genesis. It is believed, as outlined above, that most retail satellites have developed from nuclei of their own and have been far outstripped in growth by some neighboring city which achieved metropolitan status. Suburbs in a few cases have a similar history but usually develop from centrifugal forces operating from within the city itself—i.e., people of the metropolis desiring better living conditions—and centripetal forces represented by outsiders coming into the city to work who compromise between their old environment and the new one by settling in suburbs.[18]

Employment characteristics represent the economic test for satellite versus suburban status. While a large majority[19] of the wage-earners of a suburb are employed in the central city, the satellite provides local employment for by far the greater number of its own working inhabitants in its own industrial plants, distributive organizations, and service establishments.[20]

It is believed that by applying some combination or all of the foregoing standards, a satellite city can successfully be distinguished on logical grounds from an independent trading center or a suburb.[21]

[18] McKenzie, *op. cit.*, chap. xiii.

[19] Usually indeterminate from secondary sources. It should be noted that in the case of certain industrial suburbs—e.g., Cicero, Ill., and Norwood, Ohio—residents of the metropolis may work in the suburb.

[20] Another possible criterion for distinction is the existence of a local transportation service which connects the metropolis with suburbs but not with satellites.

[21] It is realized that in theory no city is strictly an independent trading center and free entirely from retail domination of another city (see p. 6, n. 8). See Edmond D. McGarry, "Consumers' Buying Habits in Satellite Cities," *Supplement: Statistical Survey* (Buffalo: University of Buffalo Bureau of Business and Social Research), VIII, No. 3A (November, 1932), 1–2. Dr. McGarry suggests development "from a central core outward," and possession by a satellite of "its own industries and commerce in which a larger proportion of its people are employed" as criteria for distinguishing a satellite from a suburb. Two other studies involving apparent satellite cities are *A Study of the Buying Habits of the People in a Small City* (Delaware, Ohio: Bureau of Business Service, Ohio Wesleyan University, June, 1927) and Department of Economics, Oberlin College, *Survey of Consumer Buying Habits in Elyria, Ohio* (Elyria: Merchants Divisions, Elyria Chamber of Commerce, June, 1930). All three of these investigations used only the personal-interview method; none went into the metropolis or into the satellite's area for data.

ELGIN, ILLINOIS, AND SURROUNDING TERRITORY

Elgin, Illinois, chosen as an example of a satellite city for intensive investigation, has a population of about thirty-six thousand[22] and is situated on the Fox River in the northeastern part of the state in Kane and Cook counties, thirty-eight miles northwest of Chicago. It is connected with that city by frequent steam and electric railway service, a through-bus line, and a four-lane highway.[23] Surrounding Elgin is a fertile farming area containing many smaller towns and villages which are interconnected by a network of paved roads.

Besides its retail competition with the metropolis to the east which overshadows the entire area, Elgin meets the influence of three other smaller cities in as many directions. Fifty-two miles to the northwest is Rockford, Illinois, a city of more than twice the population of Elgin and a trading center of considerable importance. Another satellite of Chicago (Waukegan, Ill.) with about the same population as Elgin lies forty-four miles northeast, and Aurora, Illinois, an industrial and commercial center, albeit a retail satellite of Chicago, is situated only twenty miles almost due south of Elgin on the Fox River.

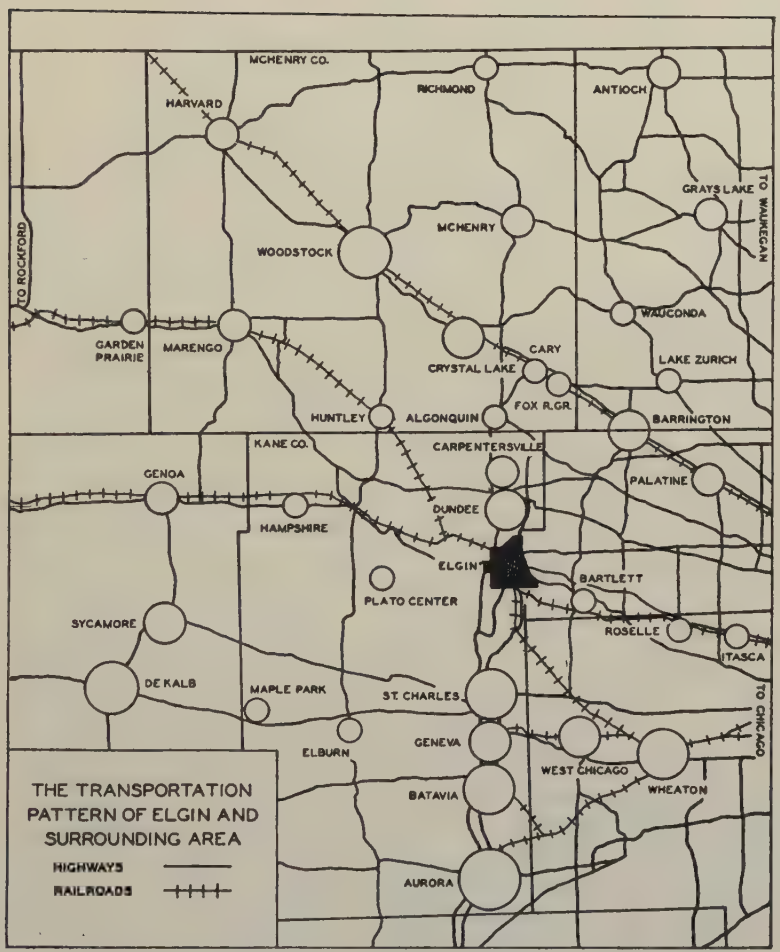
In addition to the competition of Chicago and the three smaller cities, Elgin is affected somewhat by the retail influence of Kenosha, Wisconsin, sixty-one miles to the northeast. This is due to the size of the latter city and the absence of the 3 per cent retailers' occupational tax (the "sales tax") in Wisconsin. The latter reason apparently also draws some retail trade from the northwestern part of McHenry County to Beloit, Wisconsin.[24] Reference to Map II gives some idea of the complex nature of the trading areas of northeastern Illinois as delineated on the basis of daily-newspaper circulation.

[22] Over fifty-two hundred of this number were officers, employees, and patients in the Elgin State Hospital for the insane as of January, 1938 (interview with Dr. Charles F. Read, managing officer, January 30, 1938).

[23] See Map I.

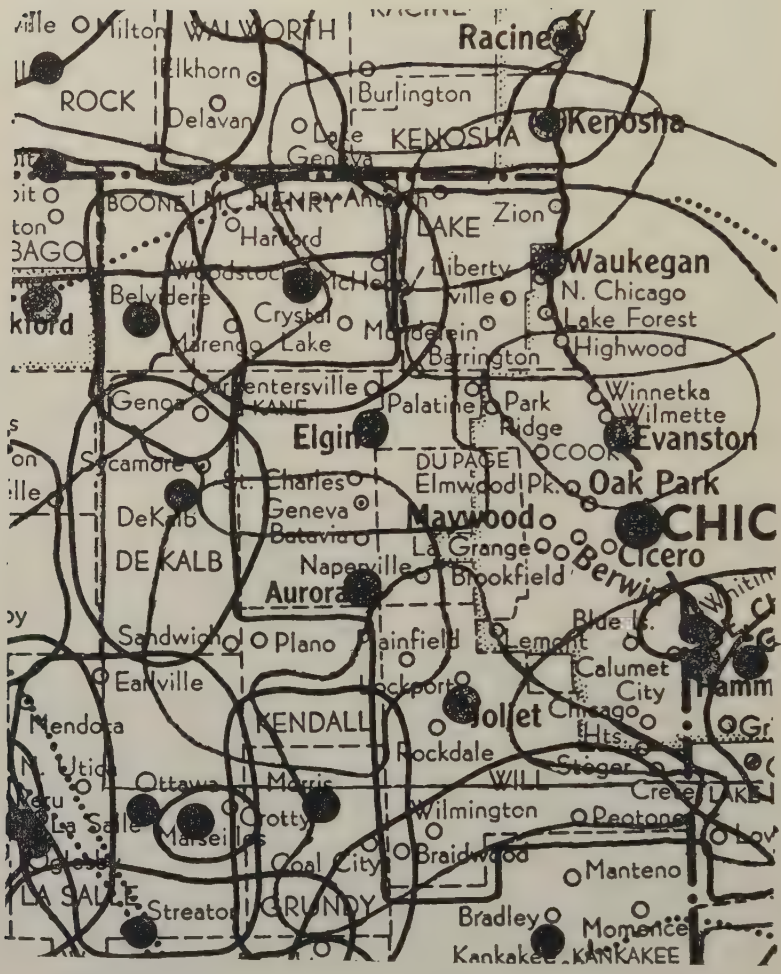
[24] This general picture is based upon personal interviews of the author with merchants, bankers, and editors in cities, towns, and villages of northeastern Illinois during the spring of 1937.

MAP I



The Transportation Pattern of Elgin and Surrounding Area

MAP II



Trading Areas of Northeastern Illinois as Delineated by the Hagstrom Company

Although, as developed later in this study, Elgin draws some retail trade from parts of Cook, De Kalb, Du Page, and Lake counties, its principal sphere of influence seems to be the northern half of Kane County and the southern half of McHenry County.

The former is important agriculturally among the counties of the state, but is primarily an industrial and commercial economy, while McHenry County is predominantly agricultural. Elgin and Aurora are the leading industrial, commercial, and financial centers of Kane County, with St. Charles playing a very minor role. In McHenry County the small towns of Woodstock and Harvard are found to be the only centers of any importance.

Income estimates show the two counties and Elgin to rank high among the counties and cities of the state. A high proportion of automobile ownership plus good roads makes possible mobility-in-buying.

The population of Kane County resides largely in cities of good size and that of McHenry in towns and on farms. The people in Elgin and the surrounding area are largely German, Scandinavian, and British, who trace their ancestry to the earlier immigrations.

METHODS AND SOURCES

The purpose of this section is fourfold: (1) to describe the methods used in collecting the original data and the sources from which they were gathered; (2) to outline the methods of analysis employed, some of which seem to be original in connection with trading-area investigation; (3) to point out some of the limitations and shortcomings of the various sections of this study; and (4) to suggest lines of further inquiry.

TRADE-TERRITORY SURVEY

The analysis of purchases made in certain Elgin stores during the week of May 17–22, 1937, inclusive, will be referred to as the trade-territory survey. The data collected therein are used in the analysis of area-Elgin relationships in chapter ii.

Method and sources.—Special sales tickets were filled in by clerks in forty-three departments of twenty-four Elgin retail establishments for purchases made during the week mentioned,

which was chosen because there were no special events designed to draw outside trade.[25] The sales clerks were instructed in writing to use a separate ticket for each customer and for each purchase by a given customer. The proprietors of the co-operating stores were induced to assist by the offer of a comparison of their portion of outside trade and the towns from which they drew trade with the same information for the group of stores and departments carrying similar goods.[26]

The use of ratio analysis in studies of this general type is well established, but the use of dollar figures on the special sales tickets and the comparison of the proportion of dollar sales made to local and outside customers[27] has not been reported in the literature on the subject. Comparison of average purchases by the two groups is made possible through this addition.

Another methodological contribution of the present study, which may be pointed out in connection with the trade-territory survey, is that of testing the significance of differences between percentages and setting limits of random error upon simple percentages, i.e., the taking into consideration of the size of the various samples and the size of the variation between ratios. The

[25] A copy of the sales ticket is given in the Appendix. The co-operating stores included the following types and number of stores and departments: women's wear, 5; men's clothing and furnishings, 10; shoes, 7; furniture and home furnishings, 8; jewelry, 3; hardware, 3; miscellaneous, 7. The last comprised two hosiery sections and one each of the following: children's clothing, hosiery and lingerie, piece goods, and toilet goods and cosmetics.

[26] See David S. Lindeman *et al.*, *A Survey of the Greensboro Retail Traiding Area* (Greensboro, N.C.: Greensboro Chamber of Commerce, 1933) (photolithograph), and J. M. Maurer and Daniel Starch, *Analysis of the Tulsa Retail Trade Area* (Tulsa: Tulsa Chamber of Commerce, November 1, 1931). The ticket itself was modeled upon one used by Lindeman and apparently adapted by him from Starch. The classification of goods was fitted to the types of stores involved in this survey, and four other additions made (1) provision for instalment as well as cash and charge sales, (2) space for dollar amount of the sale, (3) a place for checking "R.F.D." or "town" with reference to the purchaser's place of residence, (4) the tickets were partially precoded for machine tabulation. As set up they provided for rapid recording of the following information: day of the week, method of sale, amount of sale, residence of purchaser, and kind of commodity purchased. A total of 8,412 transactions were reported in a usable form.

[27] See Table 4.

formulas used in checking the ratio analysis of this thesis were suggested for use in connection with questionnaire analysis[28] but do not appear in the trading-area literature surveyed in connection with this investigation. The decision to use two standard errors to include 95 out of 100 similar samples, rather than three sigmas to include 99 out of 100, was based upon the general proposition that refinements in statistical method should not be carried too far beyond the probable accuracy of the recording of the original data.[29]

The relation of purchases in Elgin during the test week to population as a base (in chap. ii) provides a method of comparing that city's retail drawing-power by towns and by areas. This "density" concept, as it is termed in this monograph, results from a simple application of the well-known per capita form of adjustment for population differences to trading-area analysis, but it does not appear in the reported studies.[30]

The use of purchases per thousand, in addition to making possible the comparison of a measure of Elgin's retail attraction in various individual towns through visual inspection, facilitates the relation of the weighted average density of purchase for groups of towns to the weighted average proportion of newspapers emanating from Elgin, distance from that city, population of the various towns, and any other cogent data which are available for the various communities. Thus towns of high and low density can be compared in the light of other characteristics, and qualitative conclusions of association or causation may be drawn. On the

[28] Theodore Henry Brown, *The Use of Statistical Techniques in Certain Problems of Market Research* ("Business Research Studies," No. 12) (Boston: Harvard University Graduate School of Business Administration, 1935), XXII, No. 3 (May, 1935) 2–4.

[29] The allowance for size of sample, however, applies only to the single week; see p. 18.

[30] Post-office population was estimated by adding the product of the numbers of R.F.D. boxes on the rural mail route(s) of each town from which such routes emanate and the average number of members of farm families in the particular county. This is, of course, not an accurate figure, but it is submitted that it is by far a better base than the population of the town or village alone since the actual returns of the trade-territory survey did not fully separate rural from town residents.

other hand, towns may be grouped on the basis of the other variables and then compared in terms of purchases per thousand.[31]

However, the real importance of this concept seems to lie in its making possible the application of simple, multiple, and part or partial correlation techniques. In this way the retail attraction of a city, as measured by purchases made therein by residents of a number of outside communities during a test period, may be considered the dependent variable, and quantitative measures of its relationship to other independent variables can be computed.[32] In this way positive or negative association, or its absence, can be established. If simple correlation is used, all factors except density and one other are simply disregarded; when multiple correlation is applied, additional variables are brought in; by the use of part or partial correlation, all but one of the independents are held constant and the net effect of that one upon the dependent is measured.

Furthermore, equations may be set up for estimating the strength of the city's retail drawing-power in marginal towns from which no trade came during the test period or for estimating changes in attraction if one or more of the independent variables change in one direction or another through time. It might even be possible to develop, after other field investigations, an estimating equation which, while statistically accurate only within limits, would be of practical use in delineating general or even type of store and commodity trading areas of a three-dimensional nature. That is, the "shading-off" of retail influence might be established instead of the breaking-points or boundary lines commonly used in such studies. Obviously, the factors tested in this study do not account for all this variance in retail attraction, as they result in a coefficient of multiple determination of only .592, but it is submitted that an approach has been outlined which may be of some significance.

Limitations.—The first consideration is that of adequacy and representativeness of the sample as a whole in the trade-territory survey. It is estimated that the store and departments co-operat-

[31] E.g., Tables 5, 20, 21.

[32] See Table 6, p. 53, and chaps. ii and iii, *passim.*

ing represent well over 50 per cent of the dollar volume of the types of stores and departments included. Stores and departments selling largely shopping and semi-shopping lines were included for two reasons, one positive and one negative. In the first place, the flow of retail trade into Elgin was being examined; it was to be expected that this flow was greatest in the foregoing lines, and this and other studies have supported this hypothesis. Second, the food and drug stores which were approached declined to keep a record of their multitudinous purchases.[33] In the case of most of the groups, as classified in chapter ii, the author feels that the sample included more nearly 80 per cent of the volume—the single exception being jewelry.[34]

The number of usable tickets (8,412) was sufficient to give a good degree of reliability to the Elgin and outside customers' percentages, the days-of-the-week breakdown and the like for the total sample and even for most of the group-of-store subsamples, the single exception being the two hundred and ten jewelry-store transactions. However, it was found that larger subsamples would have been desirable in the furniture and hardware groups also, when outside purchases only in those lines were analyzed.[35] Likewise in the analysis by commodities, some of the subsamples were too small to be of use. These limitations are pointed out in the discussions of store groups and commodities in chapter ii. In other words, although the sample as a whole was large enough for

[33] The inclusion of hardware stores and some of the units of the miscellaneous group, however, provided a basis for some conclusions on convenience goods versus shopping and semi-shopping commodities. Automobile dealers were omitted because it was discovered through personal interview that protected territories existed which hindered the free flow of trade. Moreover, the number of sales in the test week would have been too small to provide any fair degree of statistical reliability to ratio analysis.

[34] This estimate is based upon subjective judgment developed during a period of fairly intimate contact with Elgin retailers, but it cannot be objectively confirmed. These retailers, however, when shown the list of co-operating stores, agreed that a satisfactory cross-section of the town's retail trade so far as shopping lines were concerned was being included in the survey.

[35] Purchases by outside customers were 47, 109, and 104, respectively, for the jewelry, furniture, and hardware groups.

most purposes, many of the subsamples were not.[36] In every case this fact is pointed out in the discussion, and no attempt is made to establish reliability for the subsample on the basis of the size of the gross sample as is occasionally done in marketing studies. Each of the former was made to stand or fall on its own merits. As a result, the number of conclusive differences was materially reduced when the various ratios were tested.

In another inquiry of this sort it would be desirable to have a larger gross sample, so that the subsamples—e.g., the number of purchases of outsiders in furniture stores—would be large enough to give some reliability to ratio analysis of days of the week, method of purchase, distance zones, etc. However, the size of the gross sample would have to be increased materially to bring the size of the subsample up to this figure, and the cost of collection and tabulation might become excessive.

A more important shortcoming of the trade-territory survey is that it represents only one week of one year. This means that the allowances for size of samples in testing the significance of differences and in establishing ranges of two sigma for single percentages are useful only in consideration of the single week. For example, it is stated in chapter ii that, allowing for two standard errors, 24.3–26.1 per cent of the purchases made in Elgin during the week of May 17–22, 1937, were made by outsiders. This means that in 95 out of 100 similar samples taken during the same week in the same stores the percentage of outside purchases would have been within the range indicated. This range cannot be extended horizontally over other combinations of stores during the same week or vertically over the same stores during another week. It would be much better to use, for example, two weeks in each of the four seasons. Interesting comparisons, then, might be drawn between the four tabulations, and the composite would provide a more satisfactory index of Elgin's retail attraction in the various towns of the area, which in turn could be related to various "indicative factors" or independent variables. Such a

[36] See Lyndon O. Brown, *Market Research and Analysis* (New York: Ronald Press Co., 1937), pp. 250 ff., for a discussion of major and minor universes and gross and subsamples.

series of test periods, however, would be costly and would be feasible only if financed by a bureau of research or by a civic body of some sort.

ELGIN CONSUMER SURVEY

The analysis and interpretation of the questionnaires[37] returned by Elgin families in the spring of 1937 regarding their out-of-town shopping will be referred to as the Elgin consumer survey. The data gathered were used in the discussion of Elgin-Chicago relationships in chapter iii.

Methods and sources.—The source of information in this part of the field investigation was a group of 416 Elgin families who returned usable questionnaires—approximately 4½ per cent of the total number of families residing in that city.

Since information regarding the flow of retail trade to Chicago and Oak Park was needed from several hundred Elgin families and no funds were available for hiring personal interviewers, it was decided to use the local parent-teacher organizations in the distribution and collection of the schedules.[38]

The questionnaires, which did not call for a signature, were designed to elicit considerable information regarding outside towns shopped in, commodities bought, reasons for buying, and frequency of purchase by towns, along with other information on daily newspapers read, automobile ownership, trend in out-of-town shopping, occupation, and certain other data designed to aid in classification as to income.

Limitations.—There is no doubt that the method employed, which provided an uncontrolled sample, was far less satisfactory than the carefully planned "stratified-purposive" sample which might have been attained through personal interview. The reason for using the former method has been stated before—the lack of funds for the latter plan as the present study was a one-man investigation without subsidy. Having admitted the defect in method, the next step is to check on the adequacy and representativeness of the sample.

[37] The questionnaire is reproduced in the Appendix.

[38] The idea was adapted from the use of these groups in making "pantry inventories" by certain newspapers, especially the *Cleveland Press*.

The matter of numerical adequacy which was discussed in some detail in connection with the trade-territory survey will not be treated at length in this section. Suffice it to say that although the gross sample was large enough to give fair reliability to statistical inference based upon it, the subsamples in many cases were not so. These instances are pointed out in the discussion and interpretation of the various tables in chapter iii. In another inquiry it would be desirable to increase the size of the gross sample, not for its own sake, as it were, but to broaden the base for statistical induction from observed differences and likenesses in the various subsamples of various orders, e.g., shoppers, shoppers owning cars, shoppers owning old cars, and the like.

As a check upon the representativeness or proportionality of the sample, it may be compared in certain regards to known data about the universe from which it is drawn, viz., all Elgin families. (1) It may be estimated that there were about 64.5 Chicago daily papers read per 100 families of the sample while the corresponding figure for Elgin and Elgin R.F.D. families is about 66.1. (2) The proportion of cars to families in the sample is 75.8 per cent as against 86 per cent of Elgin and Elgin R.F.D. families. The first criterion checks quite well, and it is submitted that the percentage of car owners in the sample may be out of line because families in the rural area surrounding Elgin are included in the universe and rural families tend to have a larger proportion of car owners than do city families.

Because of the method of collection of the schedules, through second parties, no direct question on income was included and the grouping was done by means of subjective judgment based on indirect evidence. The factors taken into consideration were the following: street address and reference to an economic area map of the city, number in the family, number of wage-earners, occupation(s) of the wage-earner(s), and, to a minor extent, age and kind of automobile or the absence thereof. It may be, however, that this method is no more inaccurate than the usual one of checking by interviewers from their impressions or basing the classification upon economic area of residence alone. Since (1) the method of economic grouping was subjective and (2) there are available no post-depression

data on income or even rental or home-value classifications for Elgin, the sample will not be compared with the universe on an economic-strata basis. It may be reasoned, however, from the method of collection of the schedules and a detailed inspection of them by the investigator that the highest- and lowest-income classes were not properly represented in the sample. Unfortunately no quantitative measure of this maldistribution can be adduced, so no adjustments can be made to afford valid generalizations from the sample to the universe. It will be noted that in chapters iii and iv induction in the sense of projecting the observed ratios to the city as a whole is avoided. However, it is believed that the sample is sufficiently large except for certain subsamples and sufficiently representative to justify the pointing-out of various tendencies.

OUTSIDE CONSUMER SURVEY

The analysis and interpretation of post-card questionnaires returned by residents of Elgin's trade territory in the fall of 1937 will be referred to as the outside consumer survey. The information thus obtained was used in connection with the analysis of area-Elgin and area-Chicago retail relationships discussed in chapters ii and iii.

Method and sources.—Persons residing in the territory found to be within Elgin's primary retail trading area and its competitive zone were the sources of the data in this section of the investigation. A total of 440 usable cards were returned in time for analysis out of a mailing of 4,000.[39]

Distribution of the questionnaires was made on the basis of estimated post-office population as between towns and on the basis of the ratio of town and rural to total post-office population within towns. All communities within the primary and competitive zones which had post offices were included.

The names of town residents were selected at random from the latest copies of telephone directories on file in the suburban commercial department of the Illinois Bell Telephone Company and

[39] Table 34 gives the number mailed and returned by towns. The returns were approximately 1.5 per cent of the estimated number of families in the area. The questionnaire is reproduced in the Appendix.

the cards for farmers were addressed to "Rural Route Box Holder."

Limitations.—Again, as in the case of the Elgin Consumer Survey, personal interviews would have been a more satisfactory method of collecting the data (1) because of the possibility of controlling the sample and (2) because of the number of questions which could have been asked. Again, as in the case of the Elgin survey, the circumstances surrounding the investigation made such a procedure impossible.

The gross sample of 440, or rather the 424 who reported shopping outside their home towns, was numerically large enough to provide fair statistical reliability for ratio analysis pertaining to the whole group. However, the subsamples by towns were far too small to use as an indication of whether or not a given town was tributary to Elgin. Likewise the number of families reporting Elgin as their principal shopping center[40] was too small in the analysis of commodities, frequency, and reasons. Apparently about 20,000 cards should have been mailed to obtain a workable sample of families trading principally in Elgin; even this would not have made the sample by towns large enough to use as a measure of Elgin's drawing-power.[41]

Unfortunately there can be no useful check of the representativeness or proportionality except on the bases of rural versus town families and of geographic distribution. Approximately two-thirds of the cards were mailed to residents on rural routes, in proportion to the estimated percentage of total population of the area as described above; slightly less than one-fifth of the cards returned were from the rural addressees. This discrepancy is not due to respondents' omission of information, as each card was checked "town" or "R.F.D." before it was sent out. It is suggested that the lower return from rural residents may be due to one or both of the following reasons: (1) a lesser acquaintance

[40] By "XX" after the name of that city in question No. 1.

[41] Nevertheless, the small samples actually obtained gave some interesting results, e.g., St. Charles (density of purchase during test week 26) shop in Elgin, 17, do not, 7; Geneva (9), 13, 12; Batavia (1.7), 4, 20; Barrington (31.7), 30, 6; Harvard (1.2), 1, 15, etc.; cf. Table 1, p. 29, and Table 34 in the Appendix.

with questionnaires and greater reluctance to return them or (2) failure of certain postmasters to distribute the "Rural Route Box Holder" cards because they interpreted strictly the postal rules which called for one piece for each R.F.D. box.

Be that as it may, the sample does not contain a sufficient proportion of country people and may tend to understate the proportion shopping in Elgin and overstate the percentage shopping in Chicago. This is suggested (1) on the basis of the theory of retail perspective developed in chapters ii and iii[42] and (2) on the basis of qualitative data collected in personal interviews of the investigator with merchants, editors, and bankers in towns and villages of the area; these men stated in many cases that farmers shop principally in Elgin (and/or competing small trading centers) while townspeople travel to Chicago on their shopping trips or make a larger proportion of their buying-visits to that city and consider it their principal shopping center.

The geographic distribution of the sample was fair although the percentage of returns varied from community to community.

There is little doubt but that the sample, so far as townspeople is concerned, is biased upward on the economic scale. The selection of the names of addressees of the post-card questionnaires from telephone directories automatically eliminated most of the families in the lowest-income level from the sample. Just how large this stratum is cannot be readily computed as it would vary from town to town, but it might be roughly estimated at one-fifth to one-third. This omission is not considered serious: in the first place, it was desired to obtain certain information from those who do visit shopping centers other than their home town which is more likely among the middle- and upper-income groups; second, because no generalizations are made regarding the total population of the area in terms of proportion shopping out of town or in Elgin as against other centers.

Another limitation or group of limitations lie in the questionnaire itself. The strict limitation upon space made it impossible to get information on commodities bought, frequency of buying,

[42] Elgin's retail attraction was associated negatively with size of town and that of Chicago was associated positively with that variable.

seasons of buying, and reasons for purchase by specific towns. In other words, if a respondent checked two or more towns and then checked items, frequency, etc., the latter data could not be ascribed to one of the towns with full safety. Although in chapters ii and iii the information is so ascribed in the cases of those respondents who marked Elgin and Chicago respectively with two X's or marked only the one city, the danger of this treatment is carefully pointed out in each instance.

In fine, in another study of this sort it would be desirable to obtain information from residents of the trading area being analyzed by means of personal interviews if funds were available. In that way proportionality as to population, town and rural residence, and income groups could be achieved;[43] likewise the size of subsamples could be controlled to a considerable degree so as to give better statistical reliability from that viewpoint. Third, questions on commodities, frequency, and the like could be asked regarding specific outside shopping centers in the case of respondents who patronized more than one. If funds were not available for the interview method, longer questionnaires could be used if first-class mail were utilized.[44]

OTHER SUBSURVEYS

Two personal-interview surveys by the investigator, one in Elgin's trading area and one in the city itself, and an analysis of charge-account records of one of Elgin's leading department stores will be described in this section.

Outside field survey.—During the spring of 1937 the author informally interviewed 175 retailers, newspaper editors, and bankers in thirty-eight towns and villages in the territory surrounding Elgin from Wheaton and Batavia on the south to Harvard and

[43] It is doubtful whether it would be worth while to interview the lower economic strata, however, in strict proportion to their importance numerically.

[44] This method might cost nearly as much per useful return as that previously outlined. A general discussion of the relative merits of the two methods is not in place here and is available in marketing research texts and manuals. The so-called "case-study" method of lengthy personal interviews might be most useful in digging out the reasons underlying decisions to shop out of town and choice of trading center.

Richmond on the north, and from Palatine and Itasca on the east to Sycamore, Genoa, and Marengo on the west.

The purpose of this survey was to get a first-hand picture of the area under consideration rather than to secure data for tabulation, and the latter was not attempted. The results were useful, however, in the delineation of the trading area, in the description of the area, and in the formulation of conclusions. The multiplicity of choice of trading centers confronting the consumer in most parts of the areas was strikingly presented to the investigator, and some understanding of the complex currents of retail-trade flow, or at least a better recognition of their existence, was developed.

Elgin retail and service survey.—As a further aid in acquiring a first-hand acquaintance with the field of investigation, the author personally interviewed thirty-three retailers, three bankers, and two editors in Elgin during the spring of 1937 as to the flow of trade into and out of that city.[45]

The replies to these interviews were not tabulated for the following reasons: (1) they would not mean a great deal if so arranged; (2) their primary purpose was, as stated above, to give the investigator the "feel" of the Elgin retail structure; (3) their secondary objective was to obtain co-operation in the trade-territory survey; and (4) objective data were made available by the use of special sales tickets and their analysis.

Department-store charge-account analysis.—A detailed analysis was made in the summer of 1937 from the charge-account ledger sheets of a large Elgin department store of the sections patronized, dollar volume, and activity during the period January–June, 1937, inclusive, of one hundred and twenty-five active customers living in Elgin and ninety living outside that city selected at random.[46]

[45] The administrators of the two general hospitals and the leading medical clinic of Elgin were also interviewed, as was the manager of the three Elgin moving-picture theaters.

[46] The store in question is the Joseph Spiess Co.

MINOR SOURCES OF ORIGINAL DATA

The number of charge accounts of five of the leading Chicago department stores in each of the cities and towns in the area was compiled and related to population as a measure of the relative retail drawing-power of the metropolis.

As a measure of the social attraction of Elgin and the social and commercial attraction of Chicago, the percentage of toll calls made to those cities to the total calls made to the major shopping centers of northeastern Illinois was figured for eighteen exchanges covering twenty-three communities in the area.

The home towns of the owners of non-Elgin automobiles parked in the business district of Elgin on five Saturday afternoons were traced through license numbers.

SUMMARY

Along with the description of the methods used in the collection and analysis of the original or primary data used in this monograph, an attempt has been made in this section to point out shortcomings and suggest how they might be overcome, to open up avenues of approach to the general problem of trading-area analysis and to the retail interrelationships of a satellite, its area, and a metropolis in particular.

The primary data were collected largely from consumers and retailers in Elgin and the area and from retailers in Chicago by means of personal interview, observation, and the mail type of questionnaire. Shortcomings were found in size of gross sample and subsamples, in lack of representativeness of the sample, and in the phrasing of questionnaires; some of these shortcomings were defended on the basis of the circumstances surrounding the making of the investigation.

In the course of the discussion the following apparent contributions of the present study to trading-area analysis were pointed out: (1) the relation of purchases and charge accounts to population by towns; (2) the inclusion of rural-route population in this base as separable data were not available for town and R.F.D. residents on purchases or accounts; (3) the use of simple

and multiple correlation techniques made possible by (1); (4) the reinforcement of ratio analysis by testing for errors arising from size (not from lack of proportionality, however) of the various samples and subsamples. A general contribution to the satellite problem is thought to have been made by approaching it through the study of three groups of relationships: those of the satellite and its area, those of that area and the metropolis, and those of the satellite itself and the metropolis.

CHAPTER II

ELGIN'S RETAIL TRADE AREA AND THE FLOW OF TRADE INTO THAT CITY

IN PRESENTING the results of the field investigation of the retail trading interrelationships of Elgin, its area, and Chicago, it is desirable to resolve the problem into its component parts. It seems logical, as indicated in chapter i, to approach the task from the three sides of this triangular composition of forces: Elgin and its area, that area and Chicago, and Elgin and Chicago.

In general, the problem of measuring the retail interrelationships of Elgin and the surrounding territory may be summarized by asking the following questions: Whence come the out-of-town purchasers of goods in Elgin? What types of goods do these persons buy in Elgin? How much do they buy? Why do they make these purchases? Each of these questions, of course, may be subdivided and each is interrelated with the others, but the findings will be presented in line with the individual questions and conclusions on the complex problem of cross-relationship reserved for the last chapter.

ELGIN'S RETAIL TRADING AREA

Data on place of residence of individuals patronizing certain Elgin stores during the business week of May 17–22, 1937, are given in Table 1.[1] It will be noted from column 6 that three or more purchases were made by residents giving addresses in forty-two cities, towns, and villages.[2] Unfortunately, it is impossible to determine what proportion of the purchases were made by resi-

[1] Special sales tickets covering 8,412 transactions in 43 departments of 24 Elgin stores were analyzed. For detailed description of the method and sources involved in obtaining these data see chap. i.

[2] A total of 166 purchases made by residents of Aurora, Chicago, Oak Park, Rockford, and towns accounting for only one or two purchases are omitted from the tables and discussion.

TABLE 1*

PURCHASES IN ELGIN PER THOUSAND ESTIMATED POST-OFFICE POPULATION, BY TOWNS

(1) Town	(2) Highway Distance to Elgin (Miles)	(3) Population of Town	(4) Estimated R.F.D. Population	(5) Estimated Total Post-Office Population	(6) Purchases	(7) Purchases per 1,000 Population
Algonquin	10	866	591	1,457	78	53.5
Arlington Heights	18	4,997	1,275	6,272	10	1.6
Barrington	14	3,213	2,119	5,332	169	31.7
Bartlett	8	504	421	925	53	57.3
Batavia	15	5,045	1,249	6,294	11	1.7
Bloomingdale	13	337	.....	337	9	26.7
Burlington	13	224	.....	224	24	107.1
Capron	45	397	1,148	1,545	4	2.6
Carpentersville	5	1,461	.....	1,461	52	35.6
Cary	14	731	.....	731	20	27.1
Crystal Lake	16	3,732	1,947	5,679	103	18.1
De Kalb	35	8,545	1,958	10,503	3	0.3
Dundee	5	3,038	.....	3,038	255	83.9
Elburn	19	548	865	1,413	15	10.7
Fox River Grove	14	641	.....	641	6	9.4
Geneva	12	4,607	.....	4,607	47	10.2
Genoa	23	1,168	821	1,989	18	9.0
Gilberts	9	130 E.	.....	130 E.	12	92.3
Hampshire	15	656	1,829	2,485	87	35.0
Harvard	38	2,988	2,675	5,663	7	1.2
Huntley	14	670	710	1,380	66	47.8
Itasca	16	594	.....	594	16	26.9
Lake Zurich	19	368	.....	368	16	43.5
McHenry	23	1,354	2,858	4,212	9	2.1
Maple Park	26	389	1,788	2,177	7	3.3
Marengo	25	1,948	2,281	4,229	24	5.7
Ontarioville	8	150 E.	.....	150 E.	9	60.0
Palatine	18	2,118	2,159	4,277	42	9.8
Pingree Grove	9	125 E.	.....	125 E.	4	32.0
Plato Center	11	80 E.	.....	80 E.	22	275.0
Richmond	33	514	939	1,453	4	2.8
Ringwood	27	150 E.	357	507 E.	4	7.9
Roselle	12	807	937	1,744	32	18.3
St. Charles	10	5,377	1,128	6,505	169	26.0
South Elgin	3	745	.....	745	30	40.3
Sycamore	30	4,021	1,689	5,710	10	1.8
Union	25	367	421	788	20	25.4

* Sources: col. 2: Chicago Motor Club, *Road Map, Chicago and Vicinity* (Chicago: H. M. Gousha Co., 1936); col. 3: 1930 census of population, except those marked "E," which are estimated on map mentioned; col. 4: number of R.F.D. boxes listed in U.S. Postoffice Department, *U.S. Official Postal Guide, July, 1936: Fourth Series*, XVI, No. 1 (Washington: Government Printing Office, 1936), 1062 ff., multiplied by average size of rural-farm family in respective counties shown by 1930 census of population; col. 5: sum of cols. 3 and 4; col. 6: original data; col. 7: col. 6 divided by col. 5.

TABLE 1—*Continued*

(1) Town	(2) Highway Distance to Elgin (Miles)	(3) Population of Town	(4) Estimated R.F.D. Population	(5) Estimated Total Post-Office Population	(6) Purchases	(7) Purchases per 1,000 Population
Wasco	14	107 E.	.....	107	10	93.6
Wayne	9	215 E.	.....	215 E.	9	41.9
West Chicago	14	3,477	2,134	5,611	54	9.6
Wheaton	21	7,258	1,977	9,235	10	1.1
Woodstock	26	5,471	2,908	8,379	74	8.8
Total	.....	80,113	39,184	119,317	1,624	13.6
Elgin R.F.D.	.....	.....	5,168	5,168	327	63.3
Total†	.....	80,113	44,352	124,485	1,951	15.7

† 166 purchases are omitted (see p. 28, n. 1).

dents of the open country.[3] More than one hundred purchases were made by residents of Dundee, Barrington, St. Charles, and Crystal Lake in the co-operating Elgin stores during the week for which data were obtained, while from fifty to one hundred purchases were made by residents of Hampshire, Algonquin, Woodstock, Huntley, West Chicago, Bartlett, and Carpentersville.

Although Elgin merchants and newspapers might be interested primarily in the absolute figures of purchases, it is submitted that a much more significant measure of the retail attraction of Elgin is given in column 7 of Table 1, where the number of purchases per thousand estimated post-office population is recorded. This index varies from 0.3 in the case of De Kalb to 275 in the case of Plato Center. It averages 13.6 if the Elgin R.F.D. area is excluded and 15.7 if it is included.[4]

[3] Although provision was made for obtaining the information, it was not reported consistently enough to be of use. The word "residents" is, perforce, applied to all individuals giving a certain post-office address.

[4] Estimated post-office population is used instead of town figure because of the lack of separate data on purchases by rural residents mentioned in the preceding footnote. The relation of purchase data to any population base is original so far as the author knows (see chap. i).

It is realized that the data presented give a picture of only one week in one year and only a partial and cloudy picture at best of the sources of Elgin's trade.[5] However, it is felt that by taking into consideration the relative attraction of Elgin as measured by purchases per thousand during the test week, and the qualitative information obtained by the writer in his personal-interview survey of the territory, a tentative delineation of the trading area of Elgin is justified. This is given in Map III. The area within the solid line is considered to be substantially tributary to Elgin and the area within the dotted line to be competitive territory. Although it is recognized that no two-dimensional representation can show the true situation, some idea thereof may be gained from this map.

If the number of purchases by outsiders is related to the population of the trade territory (primary area and competitive zone) as estimated on the basis of 1930 census figures, the over-all density is 17.8;[6] that for the primary area, excluding Elgin city but including Elgin R.F.D., is 36, and that for the competitive zone is 4.8. In a survey by post-card questionnaire slightly less than 40 per cent of the families residing in the primary area reported that Elgin was their principal shopping center; the comparable figure for residents of the competitive zone was a little over 9 per cent.[7] In an automobile-license check of out-of-town cars parked in the Elgin business district, nearly three-quarters of the cars were found to be registered from towns in the primary area, about one-tenth from the competitive zone, and about one-fifth from outside the trade territory.

GROUPS OF STORES

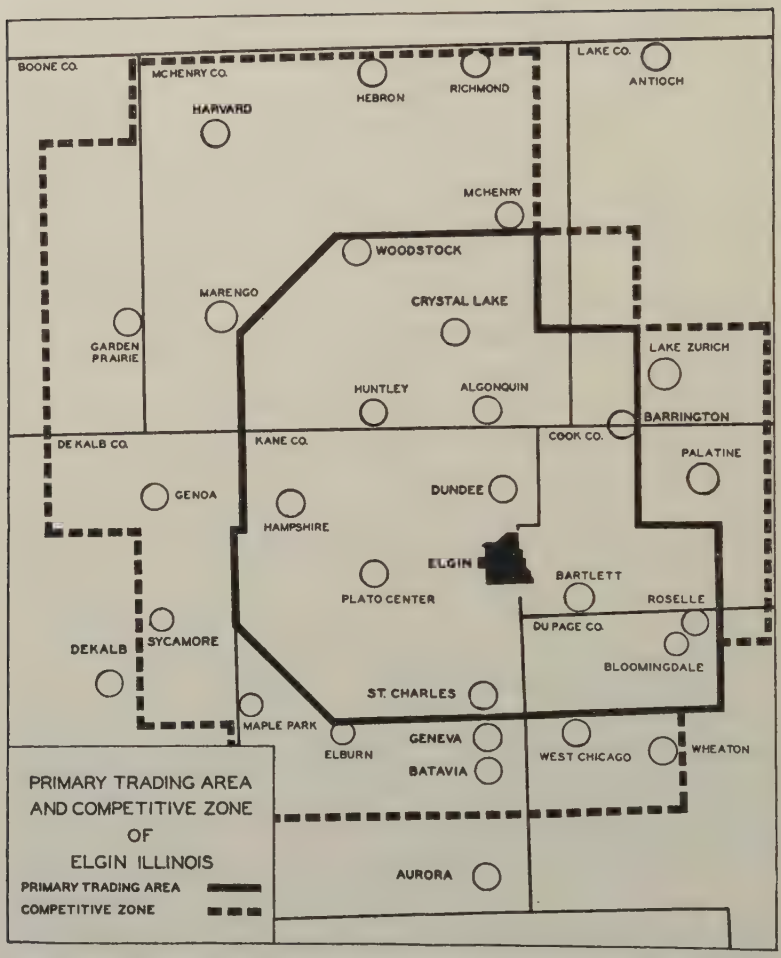
As shown in Table 12, there are some differences in the proportion of purchases made by customers from various distance-zones among the groups of stores. As might be expected, there is a concentration of patrons of the hardware stores, 52.5 per cent coming

[5] See chap. i for full acknowledgment of limitations of method.

[6] This figure is higher than the one based on town *plus* estimated R.F.D. population. This is due to the exclusion of some of the residents on the rural routes outside of the competitive zone when township figures are used.

[7] See Table 36.

MAP III



Primary Trading Area and Competitive Zone of Elgin, Illinois

from the rural territory and 93.1 per cent from less than fifteen miles from Elgin. The latter figure is significantly higher than the less-than-fifteen-mile percentages for the other groups of stores.[8] The other differences on the fifteen-mile basis, however, are not significant. The proportions of customers of hardware, men's wear, and shoe stores coming from within five miles of Elgin are all significantly higher than the percentage of customers of women's wear.[9]

In other words, there is some evidence of the greatest geographic concentration within a five-mile radius in the case of hardware-store customers, an intermediate situation in the cases of men's wear and shoes, and the least concentration on the part of women's apparel-store customers.[10]

Each of the groups of stores handled many items, and the discussion of commodity differences in the next subsection, it is believed, will be more useful.

COMMODITIES

Some of the samples are very small, and tests for significance must be made of the difference in origin of purchaser which appear when the proportions of purchases made by residents of Zones I–III and Zones IV–VI are compared by commodities in Table 13. The proportion of hardware customers[11] coming from

[8] Using the formula of $\bar{\sigma}_u = \sqrt{\bar{\sigma}_x^2 + \bar{\sigma}_y^2}$, where $\bar{\sigma}^2 = \frac{pq}{n}$, p being the percentage, q = 100 per cent − p, and n the number (cf. Theodore Brown, *The Use of Statistical Techniques in Certain Problems of Market Research*). Two standard deviations are used to cover 95 out of 100 similar samples. For limitation of statistical method in testing such data see chap. i. In this monograph "significent differences" will refer to those over two standard deviations and "degree of accuracy" will be used to indicate size of two standard deviations in terms of percentages.

[9] The furniture and jewelry-store samples are too small to provide reliable differences. The other possible combinations for testing in Table 12 are too great for computation.

[10] It is believed that the drug-store and food-store areas would be of the same order as that of hardware stores.

[11] "Customers" will be used in lieu of "purchases by residents of . . . ." for ease in expression; the two are not exactly synonymous as one customer may have made more than one purchase in a given store or of a given commodity during the week of this particular survey. It is believed that such instances will tend to be offsetting rather than cumulative in effect.

fifteen-or-less miles away is found to be significantly higher than that for any of the clothing items except men's work shoes. Comparison of the latter and men's clothing (suits and coats) and furnishings (shirts, ties, and socks) shows that a significantly larger proportion of the work-shoe customers come from within fifteen miles. It is interesting to note that there are no significant differences between women's apparel (suits, coats, and dresses), women's hosiery and lingerie, and women's shoes on the fifteen-mile-origin basis, or between furniture and floor coverings and drapes.

On the basis of a five-mile breaking-point (Elgin R.F.D., Carpenterville, Dundee, and South Elgin) the same significant differences appear, and it is noted that larger percentages of purchasers of women's shoes and of hosiery and lingerie than of women's apparel come from within five miles of Elgin. The children's shoe proportion is significantly larger than that for women's apparel, but no such difference appears between the former and women's shoes. The purchasers of men's work shoes are concentrated within the five-mile zone to a significantly greater extent than are persons buying women's shoes, but such a difference is not apparent between customers of men's dress (non-work) shoes and women's shoes.

An analysis of the ready-to-wear (women's suits, coats, and dresses) sales of one of the largest department stores in Elgin over a period of seventeen months[12] shows a significantly lower percentage of total purchasers coming from within the fifteen-mile radius and from within the five-mile radius than for the group of women's apparel stores as a whole during the week's survey.

Summing up the commodity differences in size of area, it seems that out-of-town purchasers of hardware come the shortest distance for their requirements and that the buyers of men's work shoes and children's shoes likewise are concentrated near Elgin. At the other end of the scale, the trading area for women's

[12] The Joseph Spiess Co., January, 1936, through May, 1937. This store does a great deal of advertising in the Elgin daily newspapers and stresses style to a considerable extent.

apparel seems to be the most extensive, along with that for furniture and floor coverings. On the other hand, no significant difference in size of area were found between men's clothing and men's furnishings, between women's shoes and men's dress shoes, or between women's apparel and women's hosiery and lingerie.

Some additional light is thrown upon intergroup and intercommodity differences in shopping habits in the following section.

RELATIVE IMPORTANCE OF OUTSIDE TRADE BY GROUPS OF STORES AND BY COMMODITIES

GROUPS OF STORES

The number and percentage of purchases made by Elgin and outside customers in certain stores during the business week May

TABLE 2

NUMBER AND PERCENTAGE OF PURCHASES BY ELGIN AND OUTSIDE CUSTOMERS, BY GROUPS OF STORES

Group	Elgin		Outside		Total	
	Per Cent	No.	Per Cent	No.	Per Cent	No.
Women's wear	67.5	945	32.5	456	100.0	1,401
Men's wear	69.9	1,209	30.1	521	100.0	1,730
Shoes	62.5	787	37.5	472	100.0	1,259
Furniture	78.2	390	21.8	109	100.0	499
Jewelry	77.6	163	22.4	47	100.0	210
Hardware	91.2	1,075	8.8	104	100.0	1,179
Miscellaneous	80.9	1,726	19.1	408	100.0	2,134
Total	74.8	6,295	25.2	2,117	100.0	8,412
Total, excluding hardware stores	72.2	5,220	27.8	2,013	100.0	7,233
Total, excluding hardware and miscellaneous	68.5	3,494	31.5	1,605	100.0	5,099

17–22, 1937, are given in Table 2. Approximately one-quarter of the purchases were made by nonresidents of Elgin, if all groups are included, and nearly one-third, if the hardware and miscel-

laneous group are excluded.[13] The percentages of sales to out-of-town customers is significantly higher in the women's wear, men's wear, and shoe groups than are the like figures for the furniture, jewelry, hardware, and miscellaneous groups.[14] The proportion of out-of-town purchasers in the hardware group is significantly lower than that for any other group, while in the case of shoe stores the proportion is significantly higher than all the others. The latter somewhat anomalous situation is apparently due to the high proportion of men's work shoes and children's shoes bought by outsiders.

COMMODITIES

It is, however, when the percentages of purchases made by residents of Elgin and by outsiders are analyzed by commodities in Table 3 that the most interesting differences and lack of differences are observed.

In the first place, purchases by out-of-town customers are relatively less important to a significant degree in the case of hardware than in any other commodity except children's clothing where the extremely small sample gives a very poor degree of accuracy: ± 10.6 per cent.

Excluding hardware, the only example of a convenience item, and comparing each commodity with the Elgin and outside division of trade for all the shopping and semi-shopping lines, it is found that in the following items the relative importance of out-of-town trade is significantly greater than the "average": children's shoes, men's work clothing, men's work shoes, women's apparel, and women's shoes. On the other hand, the relative importance of out-of-town trade is significantly less than the average for the following: drapes, floor coverings, piece goods, toilet goods and cosmetics, and women's hosiery. Finally, there are no significant differences, in the present sample, between the average and the following commodities: children's clothing, furniture,

[13] The range for all groups is 24.3–26.1 per cent, using two standard deviations. If the hardware group is removed, the range is 26.7–28.9 per cent. If the miscellaneous group is also removed, the range is 30.2–32.8 per cent.

[14] The last-mentioned is composed largely of departments handling convenience or semi-shopping lines (see note to Table 12).

jewelry and silverware, lingerie, men's dress shoes, and men's furnishings.

The groupings in reference to the average reported in the preceding paragraph seem to be explicable upon the basis of size of unit purchase, frequency of purchase, and importance of style elements, except for the presence of men's work clothing and work

TABLE 3

PURCHASES OF ELGIN AND OUTSIDE CUSTOMERS, BY COMMODITIES

COMMODITY	ELGIN CUSTOMERS		OUTSIDE CUSTOMERS		TOTAL PURCHASES	
	Per Cent	No.	Per Cent	No.	Per Cent	No.
Children's clothing	81.5	44	18.5	10	100.0	54
Children's shoes	59.3	86	40.7	59	100.0	145
Drapes	79.2	122	20.8	32	100.0	154
Floor coverings	80.6	100	19.4	24	100.0	124
Furniture	74.9	140	25.1	47	100.0	187
Hardware	91.2	1,079	8.8	104	100.0	1,183
Jewelry and silverware	77.6	163	22.4	47	100.0	210
Lingerie	74.1	166	25.9	58	100.0	224
Men's clothing	51.2	103	48.8	98	100.0	201
Men's dress shoes	71.0	88	29.0	36	100.0	124
Men's furnishings	74.0	991	26.0	348	100.0	1,339
Men's work clothing	62.4	116	37.6	70	100.0	186
Men's work shoes	37.9	33	62.1	54	100.0	87
Piece goods	84.0	267	16.0	51	100.0	318
Toilet goods and cosmetics	80.1	305	19.9	76	100.0	381
Women's apparel	67.4	945	32.6	457	100.0	1,402
Women's hosiery	80.3	997	19.7	245	100.0	1,242
Women's shoes	64.4	521	35.6	288	100.0	809
Miscellaneous	86.2	25	13.8	4	100.0	29
Total	74.9	6,291	25.1	2,108	100.0	8,399
No answer	.....	4	.....	9	.....	13
Total purchases	74.8	6,295	25.2	2,117	100.0	8,412
Total, excluding hardware	72.2	5,216	27.8	2,013	100.0	7,229

shoes in the foregoing average group. These two items are usually thought of as being less of a shopping nature than their position would indicate. However, the relatively high percentage of purchases by out-of-town customers in these two lines may be due to the presence among the co-operating stores of an establishment catering largely to the rural trade.[15]

[15] J. C. Penney & Co. In the case of work shoes, 43.4 per cent of the total out-of-town purchases were made by residents of Elgin R.F.D. area (see Table 13).

The next step is to analyze the differences among related commodities. No significant variations in the percentages of purchases made by nonresidents of Elgin appear among furniture and the other household items: drapes and floor coverings. Outside purchases are significantly more important in men's clothing than in men's furnishings or shoes, and a similar relationship is found between both women's apparel and women's shoes, on the one hand, and both women's hosiery and women's lingerie, on the other. Purchases by out-of-town customers of the other two items bought almost solely by women—piece goods and toilet goods and cosmetics—form significantly lower percentages of their respective total trade than in the case of women's apparel and women's shoes. Finally, it should be noted that out-of-town trade in men's clothing is significantly more important than it is in women's apparel.

The related commodity differences are in line with the usual reasoning regarding consumer's desire for comparing values, but the fact that a larger proportion of men's clothing purchases are made by outsiders than is the case in women's apparel is not explicable upon this basis. Why is the situation not reverse? The presence of the store mentioned in connection with work clothing and work shoes does not supply the answer, for there is no comparable concentration of purchasers within near-by rural territory. One possible reason lies in the fact that some of Elgin's men's stores have exclusive agencies for branded men's suits and coats. Coupling this with the idea that men's clothes may partake somewhat of the character of specialty goods results in a partial explanation of the phenomenon.

Some further light is cast upon intercommodity differences in the ratio analysis of departments patronized by certain Elgin and outside charge-customers of one of Elgin's leading department stores from January to June, 1937, inclusive, which is presented in Table 14.[16] The percentages of local and outside purchases in the semishopping lines are seen to be practically the same. However, a complementary relationship is evident in the case of the convenience and shopping lines which bears out the commodity

[16] Departments patronized will be referred to as purchases.

variations found in the entire groups of stores by means of the sales check previously reported, i.e., a significantly larger proportion of the total purchases of outside customers is in shopping lines than the comparable percentage of purchases by Elgin residents and the opposite is true in convenience items.

Analyzing the breakdown of purchases by subgroups within the shopping-goods category reveals that while a significantly higher proportion of outsiders' purchases are in ready-to-wear items, no such variation exists in household furnishings. Similarly, the outside percentage in accessories is not significantly different from the Elgin percentage. While accessories were classified a priori as shopping items in the belief that women purchased them along with suits and dresses for ensembles, the data suggest the possibility that out-of-town women may buy bags, blouses, and other accessory items in their home towns and not attempt to complete ensembles.

Upon a similar basis hosiery perhaps should be reclassified as a convenience item and house dresses as a shopping commodity. No further comment will be made, but it is submitted that a detailed analysis of department-store charge-account records with reference to relative composition of purchases by local and outside residents presents an interesting avenue of approach to a finer classification of certain commodities within the orthodox shopping-goods category.

DOLLAR-VOLUME CHARACTERISTICS OF ELGIN AND OUTSIDE TRADE

GROUPS OF STORES

The proportion of purchases and of dollar volume accounted for by Elgin and outside customers during the business week May 17–22, 1937, for the co-operating stores which reported dollar figures is given in Table 4, along with average purchase figures.[17] While outside customers made only 27.3 per cent of the purchases, they accounted for 34.6 per cent of the sales in terms of dollars, resulting in an average purchase of $6.41 as against $4.53 for the local customers. This higher average-purchase relationship ex-

[17] The jewelry and hardware groups are omitted (see note to Table 4).

tended to all groups except the shoe stores, where it was reversed by a small margin.

TABLE 4*

NUMBER OF PURCHASES AND DOLLAR SALES, ELGIN AND OUTSIDE CUSTOMERS, BY GROUPS OF STORES

GROUPS OF STORES	PURCHASES		SALES VOLUME		AVERAGE PURCHASE DOLLARS
	Per Cent	No.	Per Cent	Dollars	
Women's wear:					
Elgin customers	67.2	889	65.1	6,296.36	7.08
Outside customers	32.8	434	34.9	3,374.35	7.78
Total	100.0	1,323	100.0	9,670.71	7.31
Men's wear:					
Elgin customers	70.1	1,183	57.4	4,186.74	3.54
Outside customers	29.9	504	42.6	3,103.06	6.16
Total	100.0	1,687	100.0	7,289.80	4.32
Shoes:					
Elgin customers	64.8	677	65.3	2,924.69	4.32
Outside customers	35.2	367	34.7	1,556.87	4.24
Total	100.0	1,044	100.0	4,481.56	4.29
Furniture:					
Elgin customers	78.3	217	68.7	5,580.96	25.72
Outside customers	21.7	60	31.3	2,541.35	42.36
Total	100.0	277	100.0	8,122.31	29.32
Miscellaneous:					
Elgin customers	81.6	1,699	77.4	2,155.97	1.27
Outside customers	18.4	384	22.6	630.83	1.64
Total	100.0	2,083	100.0	2,786.80	1.34
Total:					
Elgin customers	72.7	4,665	65.4	21,144.72	4.53
Outside customers	27.3	1,749	34.6	11,206.46	6.41
Total	100.0	6,414	100.0	32,351.18	5.04

* Only these stores and departments which reported dollar sales as well as number of purchases, and only those purchases for which the amount was given, are included. The jewelry and hardware groups are not shown in order to avoid disclosure, as only one store in each reported dollar sales.

An attempt to measure the significance of the variations in average purchase of Elgin and outside customers in each group of stores in an indirect manner shows that with the exception of

the women's wear group and the shoe group all the differences are significant.[18]

It is submitted that the major portion of the variation in average purchase between Elgin and outside customers within store groups is due to differences in commodities bought rather than in the price lines purchased. For example, in the men's wear group, which includes stores and departments selling men's suits, coats and furnishings, the proportion of purchases made by local customers is much higher in the first two than in the last commodity line (see Table 3). On the other hand, in the case of shoe stores the high proportion of children's and men's work shoes bought by outsiders reduces their average purchase and there is no significant difference from the figure for Elgin residents. The price situation is illustrated by the women's wear group, which is more nearly a commodity classification than any of the others because hosiery and lingerie are included in the miscellaneous group. Here is found no significant variation between the average purchases of local residents and outsiders.

The average purchase per buying-visit of the 90 out-of-town charge customers of one of Elgin's department stores whose accounts were analyzed over the six-month period, January to June, 1937, inclusive, was found to be significantly higher than that of 125 Elgin customers—$6.97 and $4.71, respectively.[19] This difference may be due to commodities purchased, i.e., departments patronized, or to the price lines chosen. As data in the ledgers permitted analysis on a buying-visit basis only and not on individual purchase classification, no evidence can be adduced on this question. Reference to Table 15 will show that although a significantly smaller percentage of outside customers was active and they made fewer buying-visits per month, they patronized

[18] The formula for $\bar{\sigma}_{\bar{u}}$ was applied in each case to the difference between the percentages of purchases and of sales by local customers. It is realized that the formula $\sigma = \sqrt{\Sigma d^2/N}$ should have been applied to the data on dollar sales, but this was impossible in view of the large number of transactions; therefore the writer devised the indirect method described, which several statisticians agree is of some merit.

[19] Joseph Spiess Co. (see Table 15). The difference was tested in the indirect manner described in preceding note.

significantly more departments each time.[20] These are characteristics one would expect to find in such an analysis: a smaller proportion of out-of-town customers buying each month than in the case of local residents, fewer buying-visits per month by those who did purchase, a wider patronage throughout the store, and a consequently higher average purchase.[21]

METHOD OF PURCHASE BY ELGIN AND OUTSIDE CUSTOMERS

The method of purchase—cash, charge, or instalment—for nearly eight thousand purchases during the sample week is given in Table 16 by Elgin and outside customers and by groups of stores. The instalment method appears to any appreciable extent in only two groups, i.e., women's wear and furniture. Outside customers paid cash for nearly eight out of ten of their total purchases, while that method of payment was used by local buyers in about seven out of ten cases. This relationship is not consistent throughout the groups, however, the opposite being true in the case of hardware stores, and no significant difference appears between the cash-payment percentages of residents of Elgin and the outside territory in furniture and jewelry stores. The greater use of instalment credit by outside customers than by local patrons of furniture stores may be due to sampling error, but a significantly lower proportion of outsiders use the deferred-payment method in the case of women's wear and hardware stores.

It may be reasoned that because of lack of thorough acquaintance with Elgin merchants many outside residents hesitate to attempt to establish thirty-day or instalment credit for use in buying apparel and shoes, while in the higher unit-value items they are forced to do so. The apparently anomalous situation in hard-

[20] The difference between 1.4 and 1.2 departments per buying-visit was tested by applying the $\bar{\sigma}_u$ formula to the percentages of total buying-visits and total departments patronized by outsiders during the six-month period.

[21] It may well be that the actual differences in buying characteristics are greater than those shown in Table 15, as Mr. Spiess stated in a personal interview that many Elgin charge customers make small purchases for cash which would not appear on the ledger sheets or be reflected in the foregoing analysis.

ware—outside customers using charge accounts more than residents of Elgin—is difficult to explain except upon the basis that some purchases of builder's hardware by outside contractors or even retailers got into the records in spite of instructions to the contrary.

FREQUENCY OF OUT-OF-TOWN SHOPPING BY OUTSIDE CUSTOMERS

The data obtained on how frequently residents of the area surrounding Elgin go to that city to shop are of an indirect nature since many of the respondents who reported shopping in Elgin also said they shopped in other cities. In Table 17, however, are recorded the frequencies of out-of-town shopping in general given by 84 respondents who checked Elgin as the town besides their home town in which they shopped the most and 144 others who shopped in Elgin—a total of 228. The two component groups are too small to make worth while a comparison of their percentages; but, with allowance for the size of the total sample, it may be said that approximately two to three in ten of the outside families who shop out of town do so only a few times a year and approximately five to six in ten do so once a month or less frequently. Conversely, from four to five in ten reported shopping outside their home community every two weeks or more frequently. Unfortunately these percentages cannot be applied to Elgin alone as practically all the families shopping there reported patronizing some other center as well.[22] The ratios given above, then, may be thought of as being overstatements to an immeasurable degree of the frequency with which certain outside customers visit Elgin on buying trips since that city shares patronage with other centers. The only value of the percentages is as an upper limit of frequency so far as Elgin is concerned.

REASONS GIVEN BY OUTSIDE CUSTOMERS FOR OUT-OF-TOWN BUYING

The same difficulty that appeared in the preceding subsection is found in dealing with the reasons given for out-of-town buying by outsiders who reported shopping in Elgin as recorded in

[22] The post-card questionnaire sent to residents of the area did not permit securing frequency-of-visit information by individual towns shopped in (see chap. i).

Table 18. "Better selection," mentioned by nine out of ten respondents, is to a significant degree the first reason given. While "good stores" and "better prices" do not significantly differ in importance, each being reported by about five out of ten families, they definitely outrank the other reasons. Whether the respondents, if queried specifically about Elgin, would give reasons that varied from those stated for out-of-town shopping in general it is impossible to state. However, it may be noted that those respondents in Elgin's area who reported that Chicago was their principal shopping center gave the major reasons in the same order and with little variation in ratio.[23]

A greater difficulty arises in the attempt to interpret the reasons given. Even if it be granted that outside consumers patronize Elgin stores for the subjective reasons they report, where and how did they gain the impression that a better selection, better prices, and good stores were available in that city? Although advertising is specifically mentioned by an insignificant percentage of the respondents, it is submitted that it probably played an important part in developing within the mind of the consumer the ideas given as primary reasons. Then, too, a good store represents to the consumer a store in which he may find a wide selection at reasonable prices for the quality desired, along with certain service elements. Therefore, the major subjective reasons given for out-of-town buying in general, and, inferentially, for buying in Elgin in particular, simmer down to favorable ideas of selection and price in the mind of the consumer. In chapter iv an attempt will be made to outline some of the external causative factors leading to the flow of trade into Elgin from the surrounding territory.

INDICATIVE FACTORS

NEWSPAPER CIRCULATION

The number and percentage of newspapers received by towns in the primary and competitive areas of Elgin from that city, other shopping centers, and Chicago as reported by the Audit Bureau of Circulations are presented in Table 19. These figures

[23] See Table 25.

are not complete as the Bureau does not require a report on towns to which member newspapers sent less than twenty-five papers on the date of the call. However, it is believed that a fair picture is given.[24]

The retail influence of Elgin, as measured by purchases during the test week per thousand estimated post-office population in the ten towns and villages in which the Elgin daily paper had the largest percentage of total circulation is over nine times as great as in the ten towns in which the percentage was lowest—51.9 to 5.7.[25]

Reversing the viewpoint, it is found that the average percentage of the Elgin paper's circulation to the total daily-newspaper circulation is over thirteen times as great in the ten towns with the highest density of purchase as it is in the ten where the retail influence of Elgin was weakest—56.8 to 4.1.

Grouped data are presented in Table 5 which show a constantly increasing density of purchase as the percentage of Elgin's newspaper coverage increases. It is interesting to note the two major differences in density: (1) a fivefold increase when a trace of coverage appears and (2) a trebling as the coverage passes 50 per cent.

The coefficient of simple correlation between purchases per thousand estimated post-office population in forty towns[26] during the week of May 17–22, 1937, and percentage of total daily newspapers emanating from Elgin is $+.709 \pm .053$; the coefficient of determination (r^2) is .503.[27] In other words, about one-half of the variance in the strength of Elgin's influence is associated with variation in the proportion of newspaper circulation coming from that city.

[24] Undoubtedly many Chicago papers are carried home by commuters to some of the towns listed. Unfortunately there is no way of correcting for this inaccuracy.

[25] Excluding the very small village of Plato Center, with purchases of 275 per thousand. If it is included, the first figure is increased to 74.2.

[26] Separate circulation figures are not available for South Elgin, and Plato Center is omitted for the reason stated above—extremely high density and an estimated population of only eighty persons.

[27] In referring to coefficients of correlation the usual measure, the probable error or $.6745\sigma$ is used rather than the 2σ used in dealing with percentages.

However, in spite of the fact that a fairly high degree of association has been found between density of purchase and percentage of circulation, the answer is not provided as to which is cause and which is effect, or even as to whether there is a cause-and-effect relationship working in either direction.[28]

Do the residents of Elgin's trading area buy Elgin papers because they shop in that city and wish to check upon retail offer-

TABLE 5*

PURCHASES PER THOUSAND ESTIMATED POST-OFFICE POPULATION BY ELGIN NEWSPAPER COVERAGE

(1) Group† (Per Cent)	(2) Number of Towns	(3) Estimated Post-Office Population	(4) Purchases	(5) Purchases per 1,000
No Elgin newspaper circulation	6	31,737	53	1.7
0.1– 9.9	10	38,505	374	9.7
10.0– 24.9	7	22,124	289	13.1
25.0– 49.9	8	15,038	210	14.0
50.0– 74.9	6	9,453	516	54.7
75.0–100.0	4	1,715	104	60.6
Total‡	41	118,572	1,594	13.4

* Sources: col. 2: self-explanatory; col. 3: Table 1, town figures grouped; col. 4: the same; col. 5: col. 4 divided by col. 3.

† Towns are grouped on basis of percentage of Elgin daily-newspaper circulation to total daily-newspaper circulation (see Table 19).

‡ South Elgin and Elgin R.F.D. are omitted as separate circulation figures are not available.

ings in advertisements, or do they shop in Elgin because they have seen the advertisements? It is submitted that neither of these simple explanations is satisfactory but that the comparatively high degree of association between reading and buying is caused by other forces operating upon both of these variables. However, there may be a decided reinforcement, a "snowball" or circular relationship, once the outside forces have set the stage

[28] The application of correlation technique does provide a quantitative measure of association of retail drawing-power and other variables which has not been used heretofore in trading-area analysis to the author's knowledge. It does not prove anything as to causation in itself but may be submitted as evidence to substantiate qualitative reasoning.

for reader-buying and buyer-reading. Reasoning upon the nature of these forces and their relative strength will be given in chapter iv.

TRANSPORTATION FACILITIES

Elgin is connected with the north and northwestern parts of the surrounding territory by two bus lines—one through Dundee, Algonquin, and Crystal Lake to Woodstock and one which passes through Marengo on the way from Chicago to Rockford and points west and north. There is also a line between Elgin and Aurora which serves St. Charles, Geneva, and Batavia. The Chicago, Milwaukee, St. Paul and Pacific Railroad connects no trading-territory towns of any size with Elgin in either direction, while the Elgin branch of the Chicago Aurora and Elgin Railroad (electric) passes through Wheaton. Of the forty towns considered, thirteen were connected with Elgin by bus line and six by steam or electric railway.

The average density of the nineteen towns thus served was 33.5 as against 21.1 for the other twenty-one towns, but the ranges were 1.1 to 107.1 and 0.3 to 93.6, respectively. Two of the lowest ten towns in density of purchase during the sample week were connected with Elgin by common carriers, and five of the highest ten were thus served. Obviously no valid generalization can be made from these data.

The question of transportation thus seems to resolve itself into that by private automobile, and, considering the high proportion of car ownership in the surrounding territory mentioned in chapter i, further to be simplified into a matter of highway distance.

As shown in the grouped data of Table 20, the density of purchase in Elgin decreases steadily as the distance from that city of the towns of residence increases. While the figure is over sixty in the Elgin R.F.D. area and towns within five miles, it is less than four beyond the twenty-mile zone. The retail influence of Elgin is nearly six times as large within the fifteen-mile zone[29] as it is outside that imaginary area, as evidenced by 31.4 purchases per thousand during the test week compared to 5.3.

[29] This would be an irregular area and not a circle, as highway distance and not air distance was used in computation.

The average distance from Elgin to the ten towns and villages having the highest density of purchase was 11.1 miles; that of the lowest ten was 28.4 miles. Only a fair degree of negative correlation is found between density and distance for the forty towns, $-.603 \pm .067$, and the coefficient of determination is small, i.e., .364. Thus it may be said that about one-third of the variance in the strength of Elgin's retail influence over the towns and villages in its trading territory (including both the primary and the competitive zones) is associated with distance when only the two variables are considered.[30]

It seems probable that the coefficients of correlation and determination are lower than would otherwise be the case because of (1) the presence of the metropolis to the east and (2) the proximity of Aurora to the south. Reference to Map III (p. 32) will show that both the primary and the competitive areas of Elgin as delineated by the author are roughly egg-shaped, with that city in the narrow end of the egg.

The low coefficients in a way thus form a measure of the departure of the shape of the area from the theoretical circle which would obtain if Elgin were situated equidistant from competing centers of equal size to each other, whether they were all larger than, the same size as, or smaller than that city. Since Elgin is not so situated, distance alone can be used only as a partial explanation of variance in retail drawing-power as measured by density of purchase. The distance of each town in the territory to competing center or centers and the relative retail structures of the latter as well as the intangible elements of orientation or social interest must also be considered.

POPULATION

The size of the individual towns in the surrounding territory might be expected to affect the extent to which their residents

[30] If, instead of highway distance to Elgin, the differential between the distance to the major competing center and that to Elgin—the latter city's "mileage advantage"—is correlated with purchases per thousand by towns a coefficient of $+.638 \pm .093$ is obtained. Thus it may be said that there is a tendency for retail attraction to be associated positively with a net advantage in highway distance. However, the author does not consider this a satisfactory measure because personal judgment must be used in the case of some towns in deciding which of two competing centers to use in computing the mileage differential.

shopped away from home. A priori reasoning would lead to the hypothesis that residents of villages, hamlets, and the open country would look upon a town of over thirty-five thousand as having a sufficiently wide selection of shopping goods, while some of the persons living in and around towns and small cities whose own stores offered fair assortments of these lines might not be satisfied with Elgin's offerings and tend to visit competing centers and/or Chicago for at least a portion of their buying.

In Table 21 are presented data on purchase density by size of town in two groupings. When the towns and villages from which Elgin drew trade during the sample week are divided into five size groups, the densities resulting are irregular (1) because of the distance factor which is not taken into consideration and (2) because of the small number of towns in each group which permits one or two communities materially to affect each average. Use of wider class intervals, however, tends to correct these extraneous factors to a certain extent and results in a density of twice the average for the territory in the towns under one thousand population, about the average in the small-town group, and about one-twentieth as great in the towns over five thousand.[31]

However, when the purchases per thousand in the forty towns and villages are correlated with the town populations of those communities, the resulting coefficient, although in the direction expected, is not significantly large, being $-.408 \pm .089$, and the coefficient of determination is only .166. Evidently, therefore, only a small part of the variance of Elgin's retail drawing-power among towns in the surrounding territory can be explained on the single basis of the population (and inferentially the retail structure and offerings) of those towns, neglecting all other factors.

COMMUNICATION BY TELEPHONE

As Elgin is not a wholesale center of any importance, it may be assumed that toll calls to that city from towns in its area are made largely by consumers. It is submitted (1) that the proportions of total calls to outside shopping centers which are made to Elgin

[31] R.F.D. populations are included in the density figures for reasons before cited but excluded in grouping the towns, as local retail structure is believed to depend on the size of the town itself, not upon whether or not the government has assigned it rural routes.

from towns in its area may be a rough indication of the relative strength of the "social attraction" of that city and (2) that that index might be expected to be positively associated with Elgin's retail drawing-power. In Table 22 the proportions of calls to Elgin for about twenty-three thousand toll calls made during twenty business days of May, 1937, from eighteen exchanges for which data were available, including twenty-one towns and villages in the area, are presented along with the number of purchases per thousand estimated post-office population made in Elgin during the test week.

The average percentage of toll calls to Elgin to total calls to Elgin, Chicago, Aurora, Rockford, and Waukegan for the five exchanges with the highest density of purchase in Elgin is 66.8 per cent, while the comparable figure for the lowest five is only 16.4 per cent. The coefficient of simple correlation between the two series is $+ .793 \pm .060$, and the coefficient of determination is .629. These coefficients cannot be directly compared with those for newspaper coverage, distance, and population, but seem to evidence a fair degree of positive association between density and proportion of toll calls, or, inferentially, between retail and social attraction. Is there a causal relationship here? Do people tend to select the shopping center in which they have friends? Such a hypothesis seems reasonable but "visit friends" was cited by only 8 per cent of those shopping in Elgin as their reason for so doing (Table 18). How can this discrepancy be explained? (1) The correlation might be spurious, (2) the respondents in the area might be understating the importance of social connections, or (3) telephone calls might not be a measure of social attraction. It seems that the correlation is a rational one and that, although an immeasurable proportion of calls may be those of businessmen or of consumers for business purposes, the toll calls probably give a fair indication of the relative strength of the social nexus between the various towns and Elgin. Therefore, it is submitted that the second explanation is likely, viz., a subjective underevaluation of the social motives associated with retail buying.[32]

[32] This is borne out to some extent by the greater importance assigned to social trips as motivating choice of outside shopping centers by Elgin respondents (see Table 29).

In summary, the following coefficients of simple correlation and determination have been presented: density and percentage of Elgin's newspaper circulation to total circulation, + .709 ± .053, .503; density and highway distance from Elgin, − .603 ± .067, .364; density and population of towns, − .408 ± .030, .166; density and proportion of toll calls to Elgin, +.793 ± .060. This subsection may be summarized by the following statements:

1. The proportion of total newspaper circulation in a given town emanating from Elgin is positively associated with the retail drawing-power of that city to a considerable degree.

2. This proportion is, of the three variables tested for all forty towns, the most closely associated with Elgin's retail attraction.

3. The purchases per thousand estimated population by towns are associated negatively to a fair degree with distance of the towns from Elgin, i.e., that city's "pull" is less in the more distant towns which are *ipso facto* nearer competing shopping centers.

4. There is some negative association of local population and density of purchase in Elgin, viz., the people in and around the smaller communities tend to shop in Elgin more than do those residing in and near the larger communities.

5. This third index, or rather indicator, is the poorest of the three.

6. Social attraction as measured by proportion of toll calls made to Elgin is positively associated with retail attraction in the case of the twenty-three communities for which data were available.

7. While the other factors may be thought of as causative, it is justifiable to think of the first—proportion of newspaper circulation—as associative only.

COMBINED FACTORS

The next step is to measure the combined association of the three factors for which data are available for the forty towns—newspaper coverage, distance, and population—with the strength of Elgin's drawing-power through multiple correlation, and then, through part correlation, to study the relationship of that dependent variable with each of the three independents while the other two of the latter are held constant.

The coefficient of multiple correlation between purchases per thousand in Elgin during the test week[33] and (1) percentage of newspaper circulation emanating from Elgin, (2) distance to that city, and (3) population of each town excluding rural routes is .769, giving a coefficient of multiple determination ($R^2_{1.234}$) of .592. This indicates that about 60 per cent of the variance in Elgin's drawing-power is associated with variations in those independent variables and that the remaining 40 per cent is associated with variables which have not been taken into account. What are these unmeasured elements? It is submitted that income is probably the most important single one for which no data by towns are available; its theoretical effect upon the strength of Elgin's retail attraction as well as that of other unmeasured factors will be considered in chapter iv.

It should be noted, moreover, that the addition of the two variables of distance from Elgin and population to the factor of percentage of newspaper circulation increases the coefficient of determination relatively little—from .503 to .592. This is apparently due to the correlation of the newspaper percentage with each of the other two: $-.518 \pm .078$ with distance and $-.448 \pm .085$ with the size of town. As might be expected, Elgin's newspaper circulation is relatively stronger in near-by towns and in the smaller communities which presumably lack metropolitan interests.

What is the net effect[34] of each of the three variables upon the density of purchase in Elgin if the other two are held constant? The use of Ezekiel's coefficient of part correlation[35] provides some quantitative measure of these relationships. If, in each case, the other two variables are held constant by statistical method, the following coefficients of part correlation and part determination, respectively, are discovered: (1) density and percentage of total newspaper circulation by towns, .602 and .362; (2) density and

[33] Excluding Plato Center for reasons given and South Elgin because separate newspaper circulation is not available.

[34] The term "effect" is used by many statisticians, including Mills and Ezekiel, as a general concept which may mean only association.

[35] Mordecai Ezekiel, *Methods of Correlation Analysis* (New York: John Wiley & Sons, Inc., 1930), pp. 181 ff.

distance, .463 and .214; (3) density and population, .193 and .038. Although no signs are ascribed to part coefficients, the

TABLE 6*

CERTAIN MEASURES OF RELATIONSHIP FOR DENSITY OF PURCHASE IN ELGIN AND THREE VARIABLES

MEASURES OF RELIABILITY

STANDARD DEVIATION

$\sigma_1 = 28.1$

STANDARD ERRORS OF ESTIMATE

$S_{12} = 19.8$ $\quad$ $S_{1.234} = 18.0$

$S_{13} = 22.4$ $\quad$ $\overline{S}_{1.234} = 18.9$

$S_{14} = 25.7$

COEFFICIENTS OF CORRELATION

Simple	Part
$r_{12} = +.709 \pm .053$	$_{12}r_{34} = .602$
$r_{13} = -.603 \pm .067$	$_{13}r_{24} = .463$
$r_{14} = -.408 \pm .089$	$_{14}r_{23} = .193$

MULTIPLE

$R_{1.234} = .769$

$\overline{R}_{1.234} = .747$

COEFFICIENTS OF DETERMINATION

Simple	Part
$r^2_{12} = .503$	$_{12}r^2_{34} = .362$
$r^2_{13} = .364$	$_{13}r^2_{24} = .214$
$r^2_{14} = .162$	$_{14}r^2_{23} = .038$

MULTIPLE

$R^2_{1.234} = .592$

$\overline{R}^2_{1.234} = .558$

BETA COEFFICIENTS

$\beta_{12.34} = +.482016$

$\beta_{13.24} = -.329046$

$\beta_{14.23} = -.125206$

Estimating equation: $X_1 = 35.2034 + .496141X_2 - 1.016056X_3 - .162133X_4$

* X_1=purchases per 1,000 estimated population; X_2=percentage of Elgin newspaper circulation to total; X_3=distance from Elgin in miles; and X_4=population in hundreds.

.463 and .193 can be considered as negative in light of the corresponding coefficients of simple correlation previously computed.

Thus it will be seen that, owing to the intercorrelations of the

independent variables, the part coefficients of correlation and determination are lower than, but in the same order as, the simple coefficients. However, it should be noted that population alone has become almost insignificant in explaining variance in density when dissociated from newspaper coverage with which it has a negative simple correlation of $-.448 \pm .085$. Distance also loses some of its significance relative to newspaper coverage as explaining variance in density when dissociated through part correlation from coverage, with which it has a simple correlation of $-.518 \pm .078$. However, the coefficient of part determination is significantly higher between density and distance than between density and population. The various measures of relationship are brought together in Table 6, which is self-explanatory.

SUMMARY

In this chapter concerning the retail-trading interrelationships of Elgin and the surrounding territory, information based upon (1) transactions in certain Elgin stores during a sample week in May, 1937, (2) questionnaires returned by some four hundred residents of the territory, (3) a personal survey of the small towns by the author, and (4) an analysis of department-store charge accounts has been presented.

A brief summary of the findings is given below:

1. Tentative outlines of Elgin's primary and competitive trading areas have been suggested.

2. The concept of density of purchase obtained by dividing the number of purchases during the test week made by residents of each town by the estimated total post-office population in each case has been introduced.

3. This density was found to be over seven times as large in the primary area as in the competitive zone.

4. The necessity for testing ratio differences for significance was developed, i.e., the need for taking into account sampling errors when comparing percentages.

5. Hardware stores, representative of establishments selling convenience items, were found to draw their trade from a significantly smaller area than did the other groups of stores.

6. Some evidence was found that women's wear stores had the largest area and that the areas of shoe and men's wear establishments were intermediate in size.

7. Certain intercommodity differences in size of area were examined, and the trading areas for hardware, men's work shoes, and children's clothing were seen to be significantly smaller than those for women's apparel and furniture with the other commodities ranged between.

8. Outside consumers were found to account for 27.3 per cent of the purchases in shopping lines and 34.6 per cent of the dollar volume of the Elgin stores reporting dollar figures with an average purchase of $6.41 against $4.53 by Elgin residents. The relative importance of out-of-town trade was also analyzed by commodities.

9. Although detailed data were not presented, it may be stated here that Saturday was found to be the major shopping day in Elgin for both local and nonlocal customers, accounting for about three-tenths of the week's trade, while Thursday and Tuesday followed in the order named.

10. Outside customers availed themselves of charge-account facilities to a less extent than did local residents.

11. "Better selection" was given by nine out of ten outsiders who shopped in Elgin as a reason for shopping away from their home towns while "good stores" and "better prices" were next most important.

12. Finally, certain indicative factors—percentage of Elgin newspaper circulation to the total circulation, distance, population, and percentage of toll calls—were discussed, and their association with the strength of Elgin's retail drawing-power (denssity) was measured through simple, multiple, and part correlation techniques and the first variable found to be the best indicator of the three tested for the forty towns.

CHAPTER III

THE FLOW OF RETAIL TRADE FROM ELGIN AND ITS AREA INTO CHICAGO

THE AREA AND CHICAGO

THE second of the sets of relationships to be examined is that of the territory surrounding Elgin and the dominating retail metropolis, Chicago. The major questions which it would be desirable to answer include the nature of the goods bought by residents of the area in Chicago, the quantity bought, and the reasons for by-passing Elgin.

Unfortunately the data collected regarding these matters are not so complete as those concerning the area-Elgin and Elgin-Chicago sets of relationships, and inference must be used to a considerable extent. Because of the form of the post-card questionnaire, specific information regarding commodities purchased, frequency, season, and reasons is not available with reference to Chicago alone, as separated from the minor shopping centers.[1] In an effort to make the data as useful as possible, however, the replies from the 147 families who indicated that Chicago was their main or only shopping center aside from their home town, were separated from the other cards and used in connection with this section. The limitations of this method are noted in the subsections.[2]

COMMODITIES PURCHASED IN CHICAGO BY RESIDENTS OF THE AREA

The commodities reported as bought out of town by those families whose principal outside shopping center was indicated

[1] This schedule may be found in the Appendix. A detailed description of the methods of distribution and analysis, as well as a statement of limitations, is given in chap. i.

[2] In a survey of this sort it would be highly desirable, if funds were available, to use the personal-interview method with a carefully distributed sample of the residents of the area. In this way specific information regarding commodities, frequency, etc., could be collected in reference to the satellite city, other shopping centers of similar size, and the metropolis (see chap. i).

as Chicago are given in Table 7. Women's wear and women's shoes are seen to be the commodities bought out of town, and by inference in Chicago, by the largest proportion of families, while drugs and foods are distinctly of minor importance. Some of the

TABLE 7

COMMODITIES PURCHASED OUT OF TOWN BY FAMILIES SHOPPING MAINLY IN CHICAGO

Commodity	Families	
	Per Cent	No.
Women's wear	93.8	137
Women's shoes	80.1	117
Men's wear	69.2	101
Furniture	60.3	88
Rugs and drapes	58.9	86
Men's shoes	58.2	85
Hosiery and lingerie	57.5	84
Children's clothing	47.9	70
Jewelry and silverware	30.8	45
Drugs	15.8	23
Food	14.4	21
Others	13.0	19
Total answering	100.0	146
No answer	.....	1
Total	.....	147

differences which are found to be significant and otherwise are summarized below.[3]

Women's wear and men's wear	Difference significant
Women's wear and women's shoes	Difference not significant
Women's shoes and men's shoes	Difference significant
Women's wear, women's shoes and hosiery, lingerie	Difference significant
Women's wear, women's shoes, and furniture	Difference significant
Men's wear and men's shoes	Difference not significant
Women's wear, men's wear and children's clothing	Difference significant
First nine items and drugs, foods	Difference significant

[3] The differences were tested by breaking the 876 mentions into percentages and using the Brown formula for $\overline{\sigma}_u$ given above.

It is suggested, as in connection with the Elgin-area findings, that the branding of men's wear and shoes and the existence of agencies for Hart, Schaffner and Marx, Hickey Freeman, Society Brand, Florsheim, etc., in the smaller shopping centers account for the fact that fewer men than women buy apparel and shoes in Chicago. It may well also be true that to women the casual reference to "picking this up in Chicago" has considerable subjective value. They, to a much greater extent than men, will make a distinct effort to avoid purchasing garments or shoes duplicates of which other women of their acquaintance have purchased or garments and shoes which have been displayed prominently with price tag attached.

On the other hand, hosiery is fairly well standardized, women tend to want to wear the shades or weights other women are using and lingerie is covered by the outer garments, so Chicago is patronized to a lesser extent for these items than for coats, suits, and dresses. Jewelry and silverware probably are comparatively low on the list because of infrequency of purchase, while style and selection are less important in children's clothing than in men's and women's wear. Food and drug items, which are purchased in Chicago by the smallest proportion of the families, are convenience goods, probably never motivating a separate shopping trip but occasionally bought by persons who have gone to Chicago for other reasons and buy them as collateral purchases.

Comparison of Table 7 with the columns of Table 23[4] giving commodities purchased by families shopping mainly in Elgin provides some evidence that the smaller city is the scene of relatively more purchasing of hosiery and lingerie, women's shoes, children's clothing, men's wear, food, and drugs by its outside customers than is Chicago in the case of those reporting it as their principal outside shopping center. However, the opposite is true in jewelry and silverware and there is little difference in the proportions of the two groups buying furniture and rugs and drapes.

[4] These rather than the total figures are used because the Elgin "x" customers include many Chicago "xx" customers. A single "x" indicated that the respondent occasionally shopped in the city checked; a double check, "xx," indicated that the city marked was the principal outside shopping center of the respondent.

From this it may be very tentatively inferred that (1) Elgin is not by-passed to as great an extent in the first group of items, (2) Elgin is by-passed to a considerable extent in jewelry and silverware, (3) collateral purchases of food and drugs are more common on the part of those for whom the smaller city is the principal shopping center.[5]

FREQUENCY OF SHOPPING IN CHICAGO

Again, lacking definite information, recourse must be had to the replies of those who indicated Chicago as their principal or only shopping center besides their home town, and the frequency of out-of-town shopping in general is imputed to Chicago with the results given in Table 24. Within the limitations of the inference, about two-thirds of this group of families shop in Chicago once a month or less frequently while the other third shop there every two weeks or more often.[6]

It is of some interest to compare the frequency percentages with those for families reporting Elgin as the city in which they did most of their out-of-town shopping (see Table 17). In spite of the small samples, the difference between the 64.5 per cent shopping infrequently in Chicago (once a month or less often) and the 48.8 per cent shopping infrequently in Elgin is significant.[7] Thus there seems to be some evidence that those who shop principally in Elgin visit that center more frequently than those who call Chicago their principal outside shopping center visit that more distant city. Unfortunately the data collected provide no basis for comparing frequency of visits to the two cities by the families who patronize both centers.

REASONS GIVEN FOR SHOPPING IN CHICAGO

In Table 25 are reported the reasons given for out-of-town shopping by residents of the area whose principal outside shop-

[5] Factors affecting the by-passing of Elgin by the residents of its area are discussed later (see chap. iv.).

[6] As stated in connection with Elgin, this is probably an overstatement of frequency.

[7] The difference of 17.2–28.6 per cent shopping frequently (once a week or more often) in Chicago and Elgin respectively is probably significant also, as two standard errors of the difference equals 11.6 per cent and the observed variation is 11.4 per cent.

ping center is Chicago. For lack of better data these reasons will be imputed to Chicago. "Better selection" is cited by over nine-tenths and "better prices" and "good stores" each by one-half of the families. It should be emphasized again at this point that although advertising is mentioned by only a few families as a reason, it may be most instrumental in giving them the impression that they can find a better selection of goods at better prices in good stores in Chicago. In other words Table 25 shows only what the title indicates, "reasons given," and not the permanent and transient conditions and factors which underlie their buying decisions.

Comparison of the foregoing table with the columns of Table 18, wherein are presented reasons given by those customers whose principal shopping center is Elgin, shows no significant differences at any point. This lack of variation may be of some significance in itself in the sense that Elgin looks the same as a trading center to some people as Chicago does to others.[8] The important consideration of what differences exist between these two groups is brought up in the next subsection, and others are discussed in a theoretical manner in chapter iv.

INDICATIVE FACTORS

As some measure of the retail attraction of Chicago in thirty-two towns of the area the number of charge accounts per thousand estimated post-office population were computed.[9] This gives no quantitative measure of the dollar volume of purchases in any

[8] The author, in a commercial survey in the spring of 1938, queried 736 residents of Chicago and its immediately adjacent suburbs as to their reasons for shopping downtown as against outlying and suburban centers. "Wider selection" was cited by 85.6 per cent and "better prices" by 48.8 per cent. The only conclusive difference between these figures and the Elgin or Chicago reasons is that a significantly higher proportion of area residents shopping mainly in Chicago mentioned selection than in the case of Chicago and suburban residents. This may result from the fact that rather wide assortments are now available in outlying and suburban shopping centers.

[9] The stores reporting were: The Boston Store, Carson, Pirie Scott & Co., The Fair, Mandel Bros., and Marshall Field & Co. It is necessary to use the estimated post-office population, i.e., include residents on the rural routes of each town, here, as in the case of Elgin, as the stores were unable to tabulate accounts by city versus R.F.D.

case, but it is believed to be an index of the comparative drawing-power of Chicago's major retail institutions in the various communities.

TABLE 8

CHICAGO DEPARTMENT-STORE CHARGE ACCOUNTS PER THOUSAND ESTIMATED POST-OFFICE POPULATION AND CERTAIN OTHER DATA FOR CERTAIN TOWNS

Town	Chicago Charge Accounts per 1,000 Estimated Post-Office Population	Chicago Daily-Paper Percentage of Total Circulation	Distance from Chicago	Population of Town Only
Algonquin	22.0	47.5	45	866
Barrington	102.6	93.3	37	3,213
Bartlett	20.5	58.6	31	504
Bloomingdale	5.9	80.9	25	337
Burlington	0.0	33.6	52	224
Carpentersville	1.4	37.9	42	1,461
Cary	54.7	82.7	43	731
Crystal Lake	62.3	73.7	49	3,732
Dundee	35.5	30.8	41	3,038
Elburn	24.1	37.6	46	548
Fox River Grove	18.7	95.5	42	641
Geneva	100.1	69.1	37	4,607
Genoa	24.2	47.5	61	1,168
Gilberts	0.0	22.0	47	130
Hampshire	4.8	24.7	53	656
Huntley	10.1	23.7	51	670
Itasca	86.0	98.1	24	594
Lake Zurich	78.8	76.4	37	368
McHenry	30.9	84.7	53	1,354
Maple Park	4.6	63.5	53	389
Marengo	23.2	41.8	63	1,948
Ontarioville	33.0	50.8	29	150
Palatine	37.9	93.1	31	2,118
Pingree Grove	0.0	.....	46	125
Plato Center	12.5	17.5	46	80
Roselle	13.2	73.0	28	807
St. Charles	56.1	61.4	36	5,377
Union	5.1	25.0	61	367
Wasco	0.0	57.8	41	107
Wauconda	43.3	76.6	42	554
West Chicago	49.9	85.9	32	3,477
Woodstock	52.0	69.2	57	5,471

Along with this measure Table 8 shows for each town the percentage of total newspaper circulation emanating from Chicago, the distance from that city, and the population of each town.

Newspaper circulation.—The average of the Chicago daily-paper coverage in the whole group of towns is 57.3 per cent of the total circulation, but in the case of the five with the highest density of accounts the average is 79.1 per cent and the figure for the lowest five is less than half as much—35.4 per cent.[10] A more satisfactory measure of variation is the coefficient of simple correlation between density and coverage which is found to be $+.655 \pm .068$ giving a coefficient of determination of .429.

It was pointed out in chapter ii in connection with Elgin-area relationships that newspaper dominance is evidence of, rather than cause of, retail dominance, and the reasoning will not be repeated. However, it is probably significant that in two instances involving cities of such dissimilar size and retail structure as Elgin and Chicago the correlations should be so close as to "overlap" when their probable errors are considered, i.e., to have no significant difference. It might be conjectured that in the case of a small city, newspaper coverage would be a much better indicator of the strength of retail attraction than in the case of a metropolis, as in the latter instance presumably many more variables are operating. Nevertheless, the hypothesis is, if not disproved, definitely not proved by this small bit of evidence. It may be that the metropolitan paper reflects the greater number of variables present; the idea is merely suggested as no conclusions can be drawn from the scant data adduced.

Transportation facilities.—All five of the towns with the largest density of Chicago department-store charge accounts are on direct rail routes from Chicago; four of them have commuting service; two have electric railway service in addition to that of the steam railway. On the other hand, none of the five towns with the smallest proportion of charge accounts[11] is within the commuting zone or has train service of any consequence to Chicago.

Turning to private transportation and highway distance as an index of accessibility, it is found that the highest five towns in

[10] The percentage of Elgin newspaper coverage in the ten towns in which the retail attraction of that city was strongest was over thirteen times as great as in the ten towns of least density of purchase.

[11] Four with none and one with 1.4 per thousand.

density of Chicago charge accounts average thirty-five miles from Chicago while the lowest five average over forty-five miles. A negative correlation is found between density of Chicago accounts and distance from that city of $-.464 \pm .094$. There is thus seen to be some tendency to decreasing retail attraction of the metropolis with increasing distance, but this negative correlation is less than in the case of Elgin's $-.603 \pm .067$. As in the case of newspaper coverage, the probable errors overlap, indicating a nonsignificant difference but the overlap is much less,[12] and it may be said that there is here some evidence of a lesser association of distance with density in the case of the metropolis than in that of the satellite. This would seem to bear out a priori reasoning to the effect that the physical factor of distance and thus energy-time-money expenditure is of less importance in affecting purchasing in the former instance when the attraction of a wide variety of retail offerings, price (or price-ideas), prestige elements, and other factors are operating.

Population.—It is in this one of the three indicative factors that the most interesting variance of the area-Chicago from the area-Elgin relationship is found. In the first place only one town of under three thousand population appears among the highest five towns in density of Chicago charge accounts, and the average of the town populations only is over thirty-five hundred.[13] Contrariwise, there is only one town of over one thousand population among the lowest five, and the average population is about four hundred.

In the second place, a fairly substantial positive correlation of $+.643 \pm .070$ is found between density of Chicago accounts and the town population of each community against a negative correlation of $-.408 \pm .089$ for density of purchase in Elgin and town population. There is no question of significant difference

[12] The equations $-.464 - .094 = -.548$, and $-.603 + .067 = -.546$ give the distance correlations while $+.655 + .068 = +.723$ and $+.709 - .053 = +.656$ express those for Chicago and Elgin respectively in the newspaper-coverage correlations. The figures are .002 for the distance correlations and .067 for those of newspaper coverage.

[13] Itasca (594 population) is only sixteen miles from Chicago on a main line of the Milwaukee Road served by frequent commuting service. The reasons for using town populations were given in the area-Elgin discussion.

here. Chicago's retail drawing-power is greater in the larger towns while Elgin's is weaker. It is realized that city people may use charge accounts to a greater extent than small-town, village, and country folk and thus, since actual purchases were used as the dependent variable in the case of Elgin, that the difference may be overstated. However, it seems great enough to justify the generalization, which is in accord with a priori reasoning, that while the simpler tastes of the small-town residents may be satisfied with the offerings of the satellite city of thirty-six thousand, the inhabitant of a larger community seeks in the metropolis satisfaction of his more sophisticated desires. The element of proportion or perspective also appears; Elgin and its retail establishments look large to the person from a village or small town in comparison to his own community and its stores, but not so large to the resident of a small city of three thousand to five thousand population where some variety of shopping goods is offered in fair-sized establishments.

Communication by telephone.—It is reasonable to suppose that many of the telephone calls from towns in Elgin's area to Chicago are for business purposes. Since these probably comprise a larger proportion of the total than in the case of calls to Elgin and since they cannot be separated from calls for social purposes, it might be expected that this indicative factor would be less useful in estimating the retail attraction of Chicago than it was in the case of Elgin. In Table 26 the number of Chicago charge accounts per thousand estimated post-office population is presented, along with the proportion of toll calls made to Chicago for eighteen exchanges covering twenty-three towns and villages. The average percentage of calls for the five towns with the highest density of Chicago charge accounts is 66.1, and for the five with lowest density it is 31.9 per cent—not so great a difference as in the case of Elgin where the comparable figures were 66.8 and 16.4 per cent. As might be expected the positive correlation of phone-call percentage and the index of retail attraction is not so high as the $+ .793 \pm .060$ in the case of Elgin, being only $+ .530 \pm .115$. The unmeasurable proportion of business calls destroys the usefulness of this indicative factor.

ELGIN AND CHICAGO

The final set of relationships to be examined is that of Elgin itself and Chicago. The satellite is connected, as has been pointed out before, with the metropolis by highway and by electric railway, steam railway, and bus service at frequent intervals. It is a trip of about one and one-quarter hour by private or public transportation from Elgin to Chicago's "Loop." However, Oak Park, a suburban trading center of some importance,[14] may be reached by automobile or bus in forty-five minutes.[15] Thus it is possible for a housewife living in Elgin to have several hours' shopping time in Chicago or Oak Park between getting the children off to school and preparing the evening meal.

Some useful information regarding the out-of-town shopping habits of 416 Elgin families was obtained in the spring of 1937 through the co-operation of the parent-teachers' association.[16] These data are the basis for the material in this section.

Of the 416 respondent families 225 or 54.1 per cent reported that they did some shopping outside Elgin.[17] Nine out of ten of the latter families shopped in Chicago, nearly one-half in Oak Park and slightly over one-sixth in Evanston and other towns, purchases of automobiles only or amusements only being excluded (Table 9). With the same exclusions, Table 27 shows that slightly over one-half of the "shoppers"[18] patronized the stores of only one outside town while two-fifths utilized the facili-

[14] Population 63,982 in 1930; 582 retail outlets, 11 in general merchandise, including department stores, 85 in the apparel group and 15 furniture-household-radio stores in 1935 (U.S. Bureau of the Census, *Census of Business, 1935*, Vol. III: *Retail Distribution*, [Washington: Government Printing Office, 1936], p. 115).

[15] The steam railway which connects Elgin and Chicago passes through the northern part of Oak Park one mile and a half north of its main shopping section, and the electric railway runs through the southern part about one mile south of the Lake-Marion-Harlem district.

[16] For questionnaire used see Appendix. For method of dissemination and collection see chap. i. At that point the representativeness of the sample was evaluated.

[17] 54.1 $\pm$ 4.8 per cent to include two standard errors. This figure should not be applied to all Elgin families, however, as the sample cannot be proved fully representative.

[18] This term is used in the text and tables to denote Elgin families who shop out of town.

TABLE 9*

Towns Shopped In by Elgin Families

Town	Families	
	Per Cent	No.
Chicago	89.3	201
Oak Park	45.3	102
Evanston	4.4	10
Other towns	12.7	28
Total shoppers	100.0†	225

* Excluding purchases of automobiles only or amusements only.

† Percentages do not total 100 as some families shopped in more than one town. See Table 27.

TABLE 10*

Commodities Purchased out of Town by Elgin Families

Commodity	Families	
	Per Cent	No.
Women's apparel	66.7	130
Women's shoes	43.1	84
Men's clothing	38.5	75
Children's clothing	30.8	60
Women's accessories	25.6	50
Men's furnishings	25.1	49
Men's shoes	20.5	40
Dry goods	17.9	35
Furniture	16.9	33
Floor coverings and drapes	16.4	32
Toilet goods and cosmetics	14.9	29
Jewelry and silverware	13.8	27
Groceries and meats	9.7	19
Small electric items	8.2	16
Large electric items	6.2	12
Auto accessories and parts	4.6	9
Drugs	4.1	8
Hardware	4.1	8
Total answering	100.0†	195
No answer	.....	30
Total shoppers	.....	225

* Excluding automobiles and amusements.

† Percentages do not total 100 because many families purchased more than one commodity out of town.

ties of two, and only one in twenty reported shopping in three or more outside shopping centers.

COMMODITIES PURCHASED OUT OF TOWN BY ELGIN FAMILIES

About two out of three of the shopper families reported purchasing women's wear out of town while less than one in twenty bought auto accessories and parts, drugs, or hardware outside Elgin; between these extremes are found the fourteen other commodities listed in the questionnaire (Table 10).

Some of the significant differences between proportions of Elgin families purchasing certain items out of town are listed below:

1. Women's apparel and all other items
2. Women's shoes and all other items except men's clothing
3. Men's clothing and men's furnishings—shoes
4. Women's apparel—men's clothing and furniture—floor coverings—drapes
5. Women's accessories and toilet goods—cosmetics
6. Furniture—floor coverings and large electric items (refrigerators, radios)
7. Groceries—meats and drugs—hardware

On the other hand, among the nonsignificant differences are the following:

8. Men's clothing and women's shoes
9. Men's clothing and children's clothing
10. Women's accessories and men's furnishings
11. Men's furnishings and men's shoes
12. Furniture and floor coverings—drapes

In line with a priori reasoning it is seen (Nos. 1 and 3) that both men and women tend to go out of Elgin to a greater extent to buy their respective apparel items than to purchase their shoes and accessories. However, while women in the case of major clothing items and shoes seem to buy more out of town than do men in each of the corresponding categories (Nos. 1 and 2), such is not true for accessory—furnishing items (No. 10). Women shop out of town for their shoes more than for their accessories but this is not true for men (Nos. 2 and 11). More out-of-town buying is done in both male and female apparel than in furniture, rugs, drapes, or in jewelry and silverware. Suggestions have been made concerning reasons for analagous differences in previous sections

and the reasoning will not be repeated at this point. The conclusive difference between groceries—meats and drugs—hardware, all of which are considered convenience items, may be attributed to the existence of several excellent food marts in Oak Park and to collateral purchasing by Elgin housewives in that center. The smaller extent of out-of-town buying of large electrical items than of furniture, which might be considered in the same category, is difficult to explain. It may be due to a higher degree of consumer brand-recognition in the electrical field, and the existence of territorially protected dealers, which was discovered by personal interview, or to both.

PROPORTION OF EXPENDITURES MADE OUTSIDE ELGIN

The respondents were asked to estimate what percentage of their total expenditures[19] during the year May, 1936—April,

TABLE 11

PROPORTION OF EXPENDITURES OF ELGIN FAMILIES ON CERTAIN ITEMS PURCHASED OUT OF TOWN

Proportion (Per Cent)	Families Shopping Out of Town		Total Families Surveyed	
	Per Cent	No.	Per Cent	No.
None	0.0	0	48.6	191
1– 10	73.2	148	37.7	148
11– 25	21.3	43	10.9	43
26– 50	4.0	8	2.0	8
51– 75	1.0	2	0.5	2
76–100	0.5	1	0.3	1
Total answering	100.0	202	100.0	393
No answer	.....	23	.....	23
Total families	.....	225	.....	416

1937, were made outside Elgin. It is realized that this is indeed a rough estimate and subject to unmeasurable error, but the data are presented in Table 11 as some indication of the proportion of retail purchases in the most important commodity lines made out of town by a group of Elgin families. Two sets of figures are given setting the various proportions: (1) against shoppers and

[19] On the items in Table 10 plus automobiles and amusements.

(2) against all the families surveyed who answered the question. Three out of four of the families in the shopper group bought less than one-tenth of their requirements outside Elgin and only one in twenty purchased more than one-quarter. If both shoppers and non-shoppers are considered, the corresponding ratios are seven out of eight and one in thirty-five.

FREQUENCY OF OUT-OF-TOWN SHOPPING

How often do the families in Elgin who patronize outside shopping centers make buying-trips to those points? Some evidence on this question is given in Table 28. Over three-quarters of those buying in Chicago shop there four times a year or less frequently while only one-tenth do so twice a month or more frequently. The same is true of Oak Park and no significant differences appear between the two cities.[20] This does not fit in with a priori reasoning as one might expect the more accessible city, Oak Park, to be visited more frequently by those who patronize its stores. There may be two reasons for this phenomenon: (1) the fact that obviously most shoppers in Oak Park also buy in Chicago while the reverse situation is not true, and (2) the presence of some commuters to Chicago in the sample.

REASONS GIVEN FOR SHOPPING OUT OF TOWN[21]

"Better selection" was reported as the reason for shopping in Chicago and Oak Park by eight out of ten of the Elgin families who purchased goods in those cities but was cited by only four out of ten shopping in Evanston and other towns (Table 29); nine out of ten of the last group gave "social trip" as the reason. This motive was also indicated by about one-third of the families patronizing Chicago and Oak Park stores while a similar proportion indicated that they believed that goods were available at better prices in those centers.

No conclusive differences appear between the reasons given for shopping in Chicago and those for buying in Oak Park, but, in the case of other towns, "better selection" is significantly less

[20] The sample for the other towns is too small to be of any use.

[21] Reference to the schedule used for Elgin families will show that certain reasons were listed. This procedure undoubtedly tends to limit the freedom of answer, but seemed necessary under the circumstances.

important and "social trip" significantly more important than is true for the larger towns. Apparently the small proportion of Elgin families who shop in towns other than Chicago and Oak Park are drawn largely by social connections.

Comparing the reasons given for shopping in Chicago by Elgin families and by the families in its trading area who shop principally in the former city,[22] it is found that better selection and better prices are each mentioned by a significantly larger proportion of families in the area than of Elgin families. This may be due to the fact that the variety of offerings and the prices available in Chicago seem more attractive to the residents of the small cities and towns in the area than they do to the families of the satellite city of thirty-six thousand population—another example of the proportion or perspective concept developed above.[23]

INDICATIVE FACTORS

With what factors is shopping or non-shopping in the metropolis by residents of the satellite associated? Undoubtedly there are many variables at work, some of which cannot be measured. However, some light is cast upon the question in this subsection.

Income.—A priori reasoning would indicate: (1) that out-of-town shopping would be more prevalent among the higher-income classes, and (2) that within the ranks of the out-of-town shoppers the proportion of goods purchased outside would increase with income. This reasoning is based upon the presumption that higher-income families have a larger proportion of their income to spend upon style items and will be desirous of finding a wider variety or assortment of goods from which to choose.

The first hypothesis of the preceding paragraph is borne out

[22] See Table 25. In testing the significance of these differences the number of families—and not reasons—in each case was used as 100 per cent because the reasons in the two tables are not comparable for the most part, and the number of possibilities (reasons listed in the two questionnaires) is not the same.

[23] Unfortunately the other reasons in Tables 29 and 25 are not comparable. The much larger proportion of Elgin families mentioning "social trip" than of area residents reporting "visit friend" (38.7 to 4.1 per cent) is probably due to the inclusion by the former group of trips for amusement and educational purposes. It is scarcely credible that the percentage of Elgin families having friends in Chicago whom they visit is nine times as large as the like proportion of families of the area.

by Table 30 which shows that nearly three-quarters of the families with above-average income reported that they shopped out of town while the proportion for the average and below-average group was slightly over four-tenths—a significant difference.[24]

On the other hand, the second hypothesis of proportion of out-of-town purchases being greater in the higher-income groups is not conclusively proved; there is some indication of the percentage of goods bought outside being larger in higher-income groups but the differences will not pass the 2σ-test. There is, however, some evidence that the above-average income families utilize more outside shopping centers per family than do those of average and below-average income. Over one-half of the former group report that they shop in two or more cities besides Elgin while about one-third of the latter do so.[25] This is in accord with the theory that the better-income groups will seek a wider selection of goods, even to the extent of patronizing more than one outside shopping center.

Reading of Chicago newspapers.—If, as has been developed in preceding sections of this monograph, there is an association between the reading of newspapers from a given city and trading in that city, it might be expected that purchasing in Chicago would be greater among families reading Chicago daily newspapers.

Two-thirds of the families which read regularly one or more Chicago papers are shown in Table 31 to report out-of-town shopping, while only slightly over one-fourth of the non-readers do so. Therefore it may be said that the reading of Chicago papers by Elgin families is positively associated to a significant degree with shopping out of town and, inferentially, shopping in Chicago.[26] As pointed out in other connections, this does not establish a cause-and-effect relationship in either direction, merely an association. Nevertheless it is submitted that the associative nexus may be of significance and have practical application per se.

[24] The questionnaires were classified as to income by the author upon an indirect basis; the method of collection of the schedules prevented direct questioning as to income (see chap. i).

[25] 52.8 and 35.7 per cent, respectively. The difference is conclusive.

[26] Since 89.3 per cent of those families buying out of town shopped in that city (see Table 9, p. 66).

Automobiles.—Does the ownership of a car, its age, and its availibility for shopping purposes affect the buying habits of the families of Elgin? While 56.1 per cent of the car-owning families shop out of town, only 48.0 per cent of the families which do not own cars report the purchase of commodities outside Elgin. However, the samples are not large enough to provide conclusive evidence on the effect of car ownership, as the variation is not significant in terms of two standard errors of the difference. The possession of a car may render outside buying more easy but it is not essential thereto, as Elgin is connected with Chicago by excellent public transportation facilities as indicated above. Non-car owners are also able to go on shopping trips with friends who do own automobies.[27]

The age of the car owned is associated with out-of-town purchasing, as 70 per cent of the families owning newer cars (1935–37 models) shopped out of town and only 45 of those possessing older models did so—a significant difference. Obviously people do not fail to buy out of town merely because they have older cars but the possession of a car dating to 1934 or before, in the spring of 1937, may be indicative, it is suggested, of one or more of the following: (1) a comparatively low income which may reduce outside buying as outlined before; (2) a conservative nature which would work against the seeking of outside offerings of goods; (3) an independent cast of character which would not care to impress the neighbors with commodities bought in Chicago or Oak Park, (4) somewhat less physical mobility in buying, on account of the possibility of a mechanical breakdown during a shopping trip by automobile.

About 60 per cent of the families who reported that their car was available for shopping indicated that they buy outside Elgin, while 48 per cent of those whose car was not available do so. This difference is significant and justifies the statement that a larger proportion of those families whose cars are available for shopping uses buy goods away from home than is true in cases where the automobiles are not thus available.

Some data on the means of transportation used by car owners

[27] See Table 32.

and non-car owners are given in Table 32. Most of the members of the former group use their own cars while a smaller fraction use the electric railway and drive with friends; non-car families drive with friends and utilize the electric railway. The steam railway and the bus, the services of which are less frequent than those of the electric line, are patronized by a rather small percentage of both groups. In other words, the automobile, whether owned or not, is the chief method of transportation. Since nine out of ten Elgin families shopping outside that city buy in Chicago, many families must drive into that city in spite of traffic congestion.

Occupation.—If it is assumed that all the gainfully employed persons in a given family do or do not shop outside Elgin in accordance with the answer for the family as a whole, it may be seen from Table 33 that about three out of four professional people, office-workers and executives shop out of town, about two out of four skilled laborers and local businessmen, a slightly lower proportion of inside and outside salespersons, and a still smaller percentage of general laborers.[28]

In spite of the small samples in each occupation, the ratios of professional people, of executives and of office-workers who shop out of town are all significantly higher than the percentage of shoppers in any of the other classifications. Likewise, the percentages of shoppers among business owners and among skilled laborers are both higher than that for general or unskilled laborers.

It is suggested that, besides the element of income which probably influences all the rankings in outside shopping, the factor of "loyalty" or "reciprocity" may tend to hold down the percentage buying out of town in the own business and saleswork categories. However, because of the assumption mentioned above and the generally recognized fallibility of self-classification of respondents as to occupation in non-personal interviews, no detailed analysis will be attempted.

[28] On account of the very small sample, "others" and W.P.A. employees are not considered in this discussion.

CHAPTER IV

SUMMARY AND CONCLUSIONS

IN THE first chapter the problem of measuring the retail trading interrelationships of a satellite city, its tributary area, and a metropolis was propounded and a method of approach was outlined. (1) The satellite concept was developed. (2) A brief sketch was given of Elgin and the surrounding territory. (3) The sources of original data were described along with the techniques used in their collection and interpretation; limitations were also acknowledged.

ELGIN AND ITS AREA

An analysis was presented in chapter ii of the flow of retail trade into Elgin from the surrounding territory. Through the use of the retail sales check on several thousand transactions during a test week in May, 1937, and of the qualitative results of a personal survey by the author of the towns and villages surrounding Elgin, the primary and competitive trading areas of that city were outlined. The application for the first time in trading-area analysis of the density-of-purchase concept facilitated this delineation upon largely objective grounds. However, it should be noted again at this point that the results so far as the sales check was concerned applied only to a given short period of time and that observations should be made over a longer period at several times in a given year to insure a more representative picture. The strength of Elgin's attraction, as measured by the density of purchase during the sample week, was found to be over seven times as great in the primary area as it was in the competitive zone.

Women's-wear stores in Elgin were found apparently to have the largest trading areas, hardware stores to have the smallest, and men's-wear and shoe outlets to have areas of intermediate size. This ranking checked with the proportion of purchase made by non-Elgin residents in the various groups of stores. More

weight, however, was assigned to the size of area and proportion of outside trade analyses by commodities. These analyses seemed to indicate that persons in Elgin's area will go greater distances to shop for women's apparel and furniture than for any of the other commodities; hardware, men's work shoes, and children's clothing were found at the opposite end of the scale, and the other commodities, including men's clothing, men's furnishings, women's accessories, house furnishings, etc., were ranged between the two extremes. In these and the other ratio analyses percentage differences were tested for significance to allow for random errors in sampling as affected by the size of the various samples and subsamples, a procedure which had not been reported in the trading-area literature examined.[1]

Outside customers were found to account for 27.3 per cent of the purchases in shopping-good lines and 34.6 per cent of the dollar volume of the Elgin stores checked during the sample week which reported dollar volume. Saturday was the major shopping day for both local and outside customers with Thursday and Tuesday following in that order for both groups. Finally, "better selection" was by far the most important reason for shopping outside their home town reported by residents of the area who considered Elgin their principal outside shopping center. It was pointed out, however, that there are severe limitations upon interpretation of the reasons given and that the ascertaining of motives operating within the consumer is more properly within the realm of the psychologist than within that of the student of marketing.[2] However, an attempt will be made in the last section of this chapter to point out some of the various factors underlying the complex of trade currents into Elgin from its area from the latter and Elgin itself into Chicago.

The association of the strength of Elgin's retail attraction in the towns of its trading territory with percentage of Elgin newspaper circulation to total circulation, distance from Elgin, popu-

[1] This procedure does not, however, allow for errors due to nonrepresentativeness of the sample (see chap. i).

[2] This matter was discussed at some length in chap. i in connection with the Elgin Consumer's Survey.

lation of the various towns, and percentage of toll calls to Elgin was measured by means of simple, multiple, and part correlation techniques; the first variable was found to be the best measure of the first three which were tested for forty towns. While percentage of newspaper circulation emanating from Elgin and percentage of telephone calls to that city were rather highly correlated with density of purchase in Elgin in a positive direction, negative associations were found between density and distance and population of the various towns. Certain limitations were noted, but it was suggested that a significant contribution might have been made in this thesis by outlining a new approach to the problem of measuring a city's retail drawing-power.[3]

ELGIN'S AREA AND CHICAGO

The evidence in the case of the retail relationships of Elgin's area and Chicago was less satisfactory because of the manner in which most of the data were, perforce, collected. However, a large proportion of the families in the area was found to shop in Chicago, the families who considered that city their principal shopping center tended to visit it less frequently than did those families shopping mainly in Elgin; the commodities purchased in Chicago were for the most part men's and women's apparel and household furnishings; and no significant differences appeared between the reasons given for shopping in Chicago and for buying in Elgin.

The density-of-charge-account concept was developed as a measure of Chicago's retail attraction among the towns of the area and through simple correlation this variable was compared to the following factors: percentage of circulation of Chicago daily newspapers to total circulation, highway distance from Chicago, population of the towns, and proportion of toll calls to Chicago to total calls to shopping centers. The first and last variables were seen to be positively, and distance to be negatively, associated with retail attraction, as in the case of Elgin. On the other hand, Chicago's strength seemed greatest in the larger towns while Elgin's drawing-power had been shown to be greatest in the smaller towns.

[3] See chap. i for a discussion of technical possibilities and limitations of this approach.

ELGIN AND CHICAGO

Data on the Elgin-Chicago phase of the problem were secured through several hundred questionnaires filled in by Elgin families. Somewhat over one-half of the families surveyed reported shopping out of town, principally in Chicago and Oak Park. A large majority of the families who did shop outside Elgin bought only a small proportion of their requirements—less than one-tenth—out of town. Women's and men's apparel was purchased outside by the largest proportion of the respondents, and foods, drugs, and hardware by the smallest percentage.

Shopping trips to Chicago and Oak Park were reported as made only a few times a year by most of the families surveyed, and "better selection" was the reason most frequently cited for purchasing in those towns.

The higher-income groups tended to shop out of town to a greater extent than the lower-income groups; the same was found to be true of the families of professional persons, executives, and office-workers as compared with the families of local businessmen, salespersons, skilled laborers, unskilled laborers, and W.P.A. employees. The reading of Chicago daily newspapers and the availability of cars for shopping were shown to be positively and the age of the car to be negatively associated with out-of-town buying in general and buying in Chicago in particular.

CONCLUSIONS REGARDING FACTORS AFFECTING THE FLOW OF RETAIL TRADE

Certain conclusions were drawn in chapters ii and iii with respect to the interpretation of the ratio and correlation analyses of the findings of the field investigation into the Elgin-area, area-Chicago, and Elgin-Chicago sets of trading interrelationships. These generalizations upon the basis of detailed data cannot be repeated seriatim in this section. Rather, an attempt will be made to set down some broad conclusions as to the underlying causes of the complex movements of the "magnetized particles" of the physical analogy in chapter i to one or another of the magnets, especially those representing Elgin and Chicago. This figure of speech will not be reverted to, however, as it would not aid lucidity of discussion at this point.

It is submitted that the causative factors may be divided into three groups: economic, physical-environmental, and sociological; these in turn may be subdivided and are interrelated to a considerable extent. It should be re-emphasized at this point that trading areas and relationships are the resultants of consumer buying-behavior, which in turn depends upon the interaction of the so-called causative factors in the minds of those consumers.

ECONOMIC FACTORS

Among the economic group appears the factor of income. The people living in Elgin and the territory have a relatively high income in comparison with residents of other Illinois counties and of the East North Central group of states. It is submitted that this high income will tend to increase mobility in buying for several reasons.

In the first place a relatively large proportion of total income will be available for the purchase of shopping and specialty goods as against convenience goods, e.g., women's and men's apparel and shoes, furniture and house furnishings as against foods, drugs, and hardware. In the former group the style element is of considerable importance while it is not in the latter. This leads in turn to the desire to inspect as large an assortment and as many assortments as is consistent with the resources of time, money, and energy at hand.

Second, income, it may be argued, will in many instances be associated with a development of the aesthetic quality of taste or judgment as related to the purchase of certain of Marshall's "material requisites of well-being." The desire for the "style-rightness" preached by the retail copy-writer may well be greater among the higher-income groups. At least they become effectual demanders through possession of both the desire for and ability to pay for certain distinctions in dress and household possessions. It is obvious that here an economic element acts upon psychological concept; the resulting reinforcement may well be increased mobility in buying.

Third, good income means the ability to conquer physical distance through paying for public transportation or, as is apparent-

ly more frequently the case in the specific area being studied, the possession of private means of transportation, specifically the automobile. In this instance an interrelation is seen with a physical environmental factor—the lack of natural barriers and the existence of an excellent network of hard roads and, so far as Chicago is concerned, a considerable system of bus and railway transportation.

It was unfortunate that in this study income could not be related to Elgin's or Chicago's strength of attraction except in the case of Elgin families. However, in theory, it is submitted that income may work two ways in the case of the satellite-metropolis problem. Among farmers and residents of small towns it may well be that the higher-income groups will patronize Elgin stores, while in the case of persons living in the larger towns of the area the higher-income groups will tend to seek the assortments of Chicago emporiums. Here appears the phenomenon of proportionality or retail perspective which was mentioned in the preceding chapters.

It should also be noted, although the matter cannot be discussed in detail for fear of beclouding an already complex picture, that income can be considered in connection with changes through time, i.e., periods of depression and prosperity. For example, in the former instance would the net position of the satellite be improved or injured? Would the trade gained from former "by-passers" who had previously shopped in Chicago compensate for the custom lost because certain residents of the area shopped in their home towns or the subcenters of the area rather than going to Elgin in times of lowered income? Conjecture would be interesting but will not be indulged in, as this whole study is in the nature of a cross-section of transactions taking place during a short period of time.

Also among the group of economic factors is the retail structure of the cities in question. Elgin has four real department stores and many specialty or narrow-line establishments, while Chicago has many times that number. Not only are the numbers greater but the stores of Elgin as units are but a fraction as large as the stores of Chicago. The selection or variety of shopping goods

available in the latter city is of course many times greater than that of Elgin. This disparity may, it seems, work both for and against the by-passing of the satellite. Some shoppers may prefer to deal in a more intimate fashion with comparatively small establishments, while others prefer the very largeness of the Chicago units or, if not, find a distaste for size outweighed by considerations of variety or prestige. Here, again, the attitude of the consumer enters into the situation along with the objective matters of number of outlets, unit size, variety of assortment, and prestige.

Besides the subfactors of income and retail structure, relative prices or price-levels should be noted. It is submitted, however, that this matter is of much less importance in a study of retail trade flow than in an investigation of wholesale trade in consumers' goods. This is argued on the following bases: (1) In many cases shopping goods cannot be compared strictly as to prices because of differences in style, fabric, and workmanship. (2) The added cost, if any, of transportation to Elgin as against Chicago is probably too small to be reflected in the retail price. (3) There are available in both Elgin and Chicago a wide variety of price lines. (4) In the case of specialty goods resale price maintenance in many instances holds the retail price of the goods equal in the two cities.[4]

FACTORS OF PHYSICAL ENVIRONMENT

The second group of factors affecting the trade currents of the area under consideration comprise the elements of physical environment.

Although man-made upon the basis of natural factors, the pattern of urban communities in the area under consideration may be thought of as a matter of physical environment at the time of this investigation. The proximity of Elgin to a city of nearly one hundred times its size is the *raison d'être* of the satellite problem attacked in this study. The locations of Chicago, Aurora, Rockford, and Waukegan are of great significance in af-

[4] However, it should be noted that the larger buying-power of Chicago stores may lead to special events or sales at certain seasons which will offer more attractive price levels and increase the amount of by-passing.

fecting the contours of the primary and competitive zones of Elgin's retail influence and in distorting those contours from a circular form to an elliptoid. As delineated upon the basis of purchases per thousand during the test week and the personal survey by the author (see Map III, p. 32 above), the major axes of both the inner and outer spheres of influence run northwest and southeast, and the area is broader at the former end; Elgin is rather well down in the narrower end. This environmental factor of location-pattern or distance from competing centers must, of course, be taken into consideration along with the sociological element of the populations of the various communities and the related economic matter of retail structure of the various cities.

The lack of topographic barriers to the movement of people on shopping trips is the second element of this group of environmental factors. There are no mountains in the region and no bodies of water of any extent. The hills of the area are easily surmounted by modern highway engineering, and the Fox River, not broad enough to provide difficulties, is bridged at many points.

This freedom from natural hazards to transportation leads directly to the third environmental factor—that of good highway facilities. It has been shown that the area is served by a network of concrete roads. Although these roads are obviously made by man, they are rendered possible by the characteristics of the environment. This network is, moreover, related to a great extent to the sociological factor of distribution of population throughout the area—the relatively dense population of the northeastern portion of Illinois and the comparatively high degree of urbanization. The economic characteristic of relatively high income and widespread car ownership in Elgin and the surrounding territory, in conjunction with the environmental factor of excellent highway facilities, might be expected to lead to a high degree of mobility in buying on the part of the inhabitants of the whole territory. This mobility, however, does not work altogether to the advantage of the satellite. True, the area from which it draws trade has undoubtedly been widened considerably in the past two or three decades but access to the metropolis has also

been rendered a great deal more easy. Indeed it might be argued, although such conjecture is outside the scope of this study, that the net effect over a period of years has been to increase the amount of by-passing of the satellite by residents of the territory around it.

Closely related to the existence of a good highway system is the pattern of that system. As shown in Map I (p. 11), the general orientation of the roads of the area is toward Chicago—a fan-shaped arrangement with a series of north-south highways at fairly regular intervals. This orientation, it is believed, may definitely add to the amount of trade flowing from the area into the metropolis instead of into the satellite.

However, as a contra-force to this highway orientation there is the matter of traffic density in the immediate environs of Chicago and in the city itself.[5] This situation may be thought of as acting as a deterrent upon shopping in Chicago, especially in the "Loop" of that city and operating in favor of the satellite to an immeasurable extent. There may be doubt, however, as to whether there is a net effect to the advantage of Elgin, since Oak Park's shopping center can be reached from the west and northwest without the motorist's having to go through more than a very few miles of suburban traffic. In other words, Chicago traffic congestion may serve only to deflect motoring shoppers from downtown Chicago to suburban Oak Park.

Another factor which may be considered as environmental in this analysis is the public transportation system of the area. The railways tapping the territory have their foci in Chicago; the eastern portion of Elgin's area, roughly that section east of the Fox River, has commuting service to Chicago and a rather frequent schedule of trains which may be used by shoppers during the day. There is also one bus line which runs through some of the towns on its way from Rockford to Chicago. On the other hand, it seems that, so far as the section west of the Fox River is concerned (including roughly two-thirds of Elgin's primary area and four-fifths of its total trade territory including the competi-

[5] Although this phenomenon arises from sociological and economic causes it may be taken as given for the purposes of this analysis and be classified as environmental.

tive zone), public transportation to Elgin or to Chicago–Oak Park is of relatively little importance. Even in the eastern part of the area public transportation is believed to be distinctly secondary to the private automobile.[6]

A seventh environmental factor is that of climate as it affects mobility in buying through the use of the private automobile. Although no data were adduced, it is a matter of common knowledge that on only a very few days, if any, of each year are the highways of the area closed to traffic because of snow or sleet conditions. There is apparently some slackening of buying in outside shopping centers during the heat of the summer and the stormy periods of the winter, but the climate is not an important deterrent to shopping out of town. This factor cannot be said to operate for or against the satellite as related to the metropolis and will not be discussed further. It is, however, of some significance in connection with the following point as affecting the economic status of the area.

One more physical factor must be mentioned—that of soil fertility. The characteristics of the very land of the area, together with climatic conditions, tend to improve the earning-power of the farmers of the area, thus rendering them more able and likely to buy at some distance from their residence as developed under income, an economic factor. It is submitted that this situation, i.e., a rather well-to-do class of farmers and dairymen, may operate in favor of the satellite as against the metropolis since there seems to be considerable evidence that the residents of the open country tend to patronize Elgin, even in certain sections east of the Fox River where most of the city people consider Chicago their main shopping center. This preference for Elgin may exist among farmers because (1) they can shop in Elgin in their work clothes; (2) they can meet their fellow-farmers from other parts of the area in Elgin; (3) they have friends living

[6] Incomplete figures secured from railway and bus lines on short-limit round-trip tickets to Chicago from points in the area bear out this contention. See also Table 32 showing means of transportation used by Elgin families in shopping out of town; nine out of ten car owners reported using their cars, and seven out of ten non-car owners drove with friends.

in that city with whom they can visit on shopping trips; and (4) stores specializing in farm clothing, shoes, and equipment have developed in the satellite.

SOCIOLOGICAL FACTORS

Several underlying factors affecting the flow of trade into, out of, and around Elgin may be classified as sociological in nature. As was the case with the other general categories, there is again a good deal of interrelation among the elements of this group and between those elements and the factors in the other groups.

One of the sociological elements which may be of considerable importance in its effect upon currents of trade is the racial background of the area. As pointed out in chap. i, the racial composition of Elgin in respect to both foreign-born residents and their children is largely German, Scandinavian, and British, as is that of the territory surrounding Elgin. This likeness may cause the existence at a given point in time of many friendships and in some cases consanguineous relationships between residents of the area and those of Elgin. This in turn, it is believed, may lead to diversion toward that city of trade which might otherwise tend to flow toward the metropolis and by-pass the satellite, and thus operates to the advantage of the latter.[7] The presence in Elgin of two department stores owned by persons of Germanic origin and another owned by those of Scandinavian background may reinforce the operation of this racial element, as may, indirectly, the existence of German and Swedish churches in the satellite.

A prima facie case for the influence of social connections upon the strength of retail attraction of a city which is not a wholesale center was made in chapter ii by means of correlation technique and reasoning, viz., there was a rather high positive association of proportion of toll calls to Elgin and density of purchase in that city. This analysis will not be repeated.

Population and population pattern have been seen to be related to economic and physical environmental factors in the matters of retail structure and transportation facilities, respec-

[7] As a specific instance, the Germanic residents of Schaumberg township some miles east of Elgin are reported to trade in that city.

tively. They are further allied to the psychological concept of retail perspective. As the factor of population pattern is of most importance as reflected in the other groups of causes, it will not be discussed in detail at this point except to restate the proposition that, *ceteris paribus*, it is believed, upon the basis of theory and some objective data, that rural families will tend to by-pass the satellite less than do townspeople and that residents of the larger communities will tend to do so to a greater extent than will persons living in the smaller towns.

The factor of occupation of urban residents is, of course, closely allied to income which has been treated above in some detail in connection with the economic group of causes, but it may be germane to the present issue to consider the effect of occupational differences in cases where the influence of income is relatively inactive, i.e., various occupations in which income is approximately the same. For a clear-cut example the case of a prosperous merchant and a major executive of a manufacturing concern in one of the cities of the area might be cited. Here is it quite probable that the latter and his family will trade out of town to a greater extent than the former who doubtless has participated, as middleman, in one or more "trade-at-home" campaigns and hopes to set an example by his own actions as consumer. Similarly the minor executive at the same industrial plant and the senior traveling salesman who live in the city in question will tend to buy more out of town than the owner of a smaller business or the minor executive in a local commercial enterprise. In the case of professional people, on the other hand, generalization is more difficult; they may have the reciprocal attitude or they may not. Examples will not be multiplied, but it can readily be seen that occupation may have an effect on out-of-town buying. However, there would seem to be no discernible net results in the special case of the satellite-metropolis problem, i.e., occupation as such and divorced from economic causes would not seem to lead to a greater or lesser degree of by-passing Elgin.

Besides racial background, population pattern, and occupation, the daily newspaper—a means of communication between groups of people—would seem to be properly classified among

the group of sociological factors. However, it is included among causative elements only because it may belong that in category. A fairly high degree of positive association was found between proportion of newspaper circulation and indices of retail drawing-power in the cases of both Elgin and Chicago, and it is undoubtedly true that the thousands of Chicago daily papers pouring into Elgin and its territory mark that city as a satellite.[8] Whether persons living in the area go around Elgin to shop in Chicago because they read Chicago papers or vice versa is a moot question not answered in this investigation.

The fifth factor is probably more accurately described as cultural but will be included in the sociological group—the existence of legitimate theaters, art galleries, and museums in Chicago.[9] It is difficult indeed, to weigh the importance of this situation as a cause of trade flow. All that can be said is that it undoubtedly works to some extent and in one direction only—toward increasing the flow of trade from the area and the satellite itself to the metropolis.

Some of the psychological implications of the economic, environmental, and sociological factors affecting the currents of trade in the area under consideration have been pointed out in the three preceding subsections. In other words, a realization has been indicated that such objective, external characteristics as income, occupation, retail structure of competing centers, physical accessibility of those centers, newspaper advertisements of retail stores, size of place of residence, etc., are significant only as they affect the mind of the consumer. It is in his mind that decisions are made: (1) as to whether to shop at home or out of town, and (2) if the latter, as to which town or towns to shop in. It seems reasonable to believe that detailed analysis of the motives operat-

[8] It is suggested that a newspaper with an aggressive management might have considerable influence upon the currents of retail trade in zones of indifference—i.e., competitive areas—under certain circumstances. However, in practice there seems to be in many cases an implicit, if not explicit, division of territory among the newspapers of competing shopping centers which may vitiate competitive forces.

[9] Moving-picture theaters are of little relative importance in themselves as one of the Elgin houses has first-run pictures very shortly, i.e., one week, after Chicago first-run Loop theaters and before the largest outlying houses in the latter city.

ing within the consumer and the development of mental attitudes is a matter of psychological rather than marketing inquiry and hence outside the scope of this study.

The concept of "retail perspective," which has been mentioned from time to time in this thesis is a psychological matter—an attitude which is the resultant of objective and subjective forces working out patterns within the mind of the consumer.

Likewise the principal reason given by residents of the area and of Elgin for shopping outside their home towns, "better selection," is an idea or attitude traceable to a complex of causes. Without certain of the objective factors outlined this attitude would not have developed without extended personal investigation by consumers, but developed it has. Similarly the belief that better prices are available elsewhere is the result of advertisements, advice of friends, etc., as well as personal knowledge and experience of a necessarily limited nature.

The question of why people shop outside their home town has not been definitely answered, but it has been shown that the phenomenon of out-of-town buying reported in this investigation is too intricate to account for by merely tabulating the answers checked by consumers on questionnaires, and it is hoped that some of the external forces operating upon the consumer have been indicated.

The question of by-passing the satellite is, in reality, a special case of out-of-town buying in general, and the net effects of various economic, sociological, and environmental factors upon this specific aspect of consumer buying-behavior have been suggested.

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APPENDIX

TABLE 12*

PURCHASES OF OUTSIDE CUSTOMERS BY DISTANCE ZONES, BY GROUPS OF STORES

Group	Elgin R.F.D.	Zone I 0-5 Mi.	Zone II 6-10 Mi.	Zone III 11-15 Mi.	Elgin R.F.D. and Zones I-III	Zone IV 10-20 Mi.	Zone V 21-25 Mi.	Zone VI 26 Mi. and Over	Zones IV-VI	Total Purchases
Women's wear.....	38	71	85	124	318	56	17	28	101	419
Men's wear.....	90	76	75	132	373	52	15	32	99	472
Shoe stores.....	88	90	62	117	357	30	27	28	85	442
Furniture stores....	10	17	20	31	78	10	1	7	18	96
Jewelry stores.....	7	6	10	13	36	3	2	3	8	44
Hardware stores.....	53	15	12	14	94	5	2	.....	7	101
Miscellaneous depts.	41	62	70	126	299	46	17	15	78	377
All groups.....	327	337	334	557	1,555	202	81	113	396	1,951
	Percentages									
Women's wear.....	9.1	16.9	20.3	29.6	75.9	13.4	4.1	6.6	24.1	100.0
Men's wear.....	19.1	16.1	15.9	28.0	79.1	11.0	3.2	6.7	20.9	100.0
Shoe stores.....	19.9	20.4	14.0	26.5	80.8	6.8	6.1	6.3	19.2	100.0
Furniture stores....	10.4	17.7	20.8	32.3	81.2	10.4	1.1	7.3	18.8	100.0
Jewelry stores.....	15.9	13.6	22.7	29.6	81.8	6.8	4.6	6.8	18.2	100.0
Hardware stores.....	52.5	14.8	11.9	13.0	93.1	4.9	2.0	.....	6.9	100.0
Miscellaneous depts.	10.9	16.4	18.6	33.4	79.3	12.2	4.5	4.0	20.7	100.0
All groups.....	16.8	17.3	17.1	28.5	79.7	10.4	4.1	5.8	20.3	100.0

*Distances given in column headings are based on highway mileage from downtown Elgin. See Table 1. Miscellaneous departments include two hosiery sections and one each of the following: children's clothing, hosiery and lingerie, piece goods, and toilet goods and cosmetics.

TABLE 13*

PURCHASES OF CERTAIN COMMODITIES BY OUTSIDE CUSTOMERS, BY DISTANCE ZONES

Commodity	Elgin R.F.D.	Zone I 0-5 Mi.	Zone II 6-10 Mi.	Zone III 11-15 Mi.	Elgin R.F.D. and Zones I-III	Zone IV 10-20 Mi.	Zone V 21-25 Mi.	Zone VI 26 Mi. and Over	Zones IV-VI Total	Total Purchases
	Actual Purchases									
Children's shoes	17	11	7	13	48	3	4	3	10	58
Floor coverings and drapes	7	9	10	14	40	6	1	4	11	51
Furniture	3	9	8	15	35	3	.....	3	6	41
Hardware	53	15	12	14	94	5	2	.....	7	101
Jewelry and silverware	7	6	10	13	36	3	2	3	8	44
Men's clothing	7	18	16	25	66	12	4	9	25	91
Men's furnishings	38	58	63	83	242	27	15	21	63	305
Men's dress shoes	6	5	4	10	25	.....	3	4	7	32
Men's work shoes	23	6	7	11	47	2	4	.....	6	53
Women's apparel	38	71	85	124	318	55	17	28	100	418
Women's hosiery and lingerie	37	51	48	87	223	38	9	10	57	280
Women's shoes	35	59	39	77	210	24	14	18	56	266
Total	271	318	309	486	1,384	178	75	103	356	1,740
	Percentages									
Children's shoes	29.3	19.0	12.1	22.4	82.8	5.2	6.9	5.2	17.3	100.0
Floor coverings and drapes	13.7	17.6	19.6	27.5	78.4	11.8	2.0	7.8	21.6	100.0
Furniture	7.3	22.0	19.5	36.6	85.4	7.3	.....	7.3	14.6	100.0
Hardware	52.5	14.8	11.9	13.9	93.1	4.9	2.0	.....	6.9	100.0
Jewelry and silverware	15.9	13.6	22.7	29.6	81.8	6.8	4.6	6.8	18.2	100.0
Men's clothing	7.7	19.7	17.6	27.5	72.5	13.2	4.4	9.9	27.5	100.0
Men's furnishings	12.5	19.0	20.6	27.2	79.3	8.9	4.9	6.9	20.7	100.0
Men's dress shoes	18.7	15.6	12.5	31.3	78.1	.....	9.4	12.5	21.9	100.0
Men's work shoes	43.4	11.3	13.2	20.8	88.7	3.8	7.5	.....	11.3	100.0
Women's apparel	9.1	17.0	20.3	29.7	76.1	13.1	4.1	6.7	23.9	100.0
Women's hosiery and lingerie	13.2	18.2	17.1	31.1	79.6	13.6	3.2	3.6	20.4	100.0
Women's shoes	13.1	22.2	14.7	28.9	78.9	9.0	5.3	6.8	21.1	100.0
Total	15.6	18.3	17.8	27.9	79.6	10.2	4.3	5.9	20.4	100.0

*In the case of hardware, jewelry and silverware, and women's apparel the store-group purchases and percentages given in Table 12 are used here as only one classification of commodity was reported. A total of 150 purchases of other and unreported commodities is not included. A total of 237 purchases of the foregoing commodities made by customers from unreported towns competing shopping centers and towns from which came less than three customers is also excluded. In no commodity does this exceed 3 per cent of the base.

TABLE 14

DEPARTMENT-STORE CHARGE-ACCOUNT ANALYSIS--DEPARTMENTS PATRONIZED BY ELGIN AND OUTSIDE CUSTOMERS

Item and Type	Elgin Customers' Purchases		Outside Customers' Purchases		Total Purchases	
	Per Cent	Number	Per Cent	Number	Per Cent	Number
Convenience items:						
Beauty parlor	1.05	14	0.51	4	0.85	18
Cards	1.43	19	1.15	9	1.32	28
Drugs	1.95	26	2.18	17	2.03	43
Handkerchiefs	1.35	18	1.02	8	1.23	26
Notions	2.85	38	2.82	22	2.84	60
Patterns	0.90	12	0.64	5	0.80	17
Shoe repairs	2.85	38	0.26	2	1.89	40
Toilet goods and cosmetics	4.72	63	3.97	31	4.45	94
Toys	0.52	7	0.13	1	0.38	8
Total	17.62	235	12.68	99	15.79	334
Semi-shopping items:						
Domestics	3.82	51	3.84	30	3.83	81
Fancy goods	2.55	34	4.23	33	3.17	67
Hosiery	11.70	156	8.58	67	10.54	223
House dresses	4.35	58	6.66	52	5.20	110
Infant's wear	4.35	58	2.69	21	3.74	79
Men's furnishings	6.07	81	6.66	52	6.29	133
Neckwear	0.82	11	0.38	3	0.66	14
Piece goods	4.05	54	3.84	30	3.97	84
Ribbons	0.67	9	1.15	9	0.85	18
Total	38.38	512	38.03	297	38.25	809
Shopping items:						
Ready-to-wear:						
Coats	0.97	13	1.79	14	1.28	27
Dresses	4.95	66	6.53	61	6.00	127
Junior	1.58	21	1.02	8	1.37	29
Suits	0.60	8	1.28	10	0.85	18
Total	8.10	108	11.92	93	9.50	201
Accessories:						
Bags	2.77	37	2.56	20	2.70	57
Blouses	2.55	34	1.66	13	2.22	47
Gloves	2.70	36	1.92	15	2.41	51
Jewelry	0.37	5	0.77	6	0.52	11
Sweaters	0.90	12	0.77	6	0.86	18
Total	9.29	124	7.68	60	8.70	184
Corsets	3.60	48	4.22	33	3.83	81
Lingerie	7.65	102	8.58	67	7.99	169
Millinery	3.82	51	4.99	39	4.26	90
Women's shoes	5.02	67	4.61	36	4.87	103
Household furnishings:						
Curtains	2.40	32	2.30	18	2.37	50
Drapes	0.37	5	0.90	7	0.57	12
Interior decoration	1.43	19	1.66	13	1.51	32
Linoleum	0.67	9	0.13	1	0.47	10
Rugs	1.05	14	1.15	9	1.09	23
Shades	0.60	8	1.15	9	0.80	17
Total	6.52	87	7.29	57	6.81	144
Shopping item total	44.00	587	49.29	385	45.96	972
Grand total	100.00	1,334	100.00	781	100.00	2,115

TABLE 15

DEPARTMENT-STORE CHARGE-ACCOUNT ANALYSIS--SUMMARY

Item	Jan.	Feb.	March	April	May	June	Jan.-June Incl.
	125 Elgin Customers						
Per cent of customers buying during month	73.6	64.4	70.4	75.2	82.4	73.6	75.1
Number of buying-visits* per customer buying during month	1.8	2.0	2.1	2.2	2.1	2.0	2.0
Average purchase per buying-visit.	$3.98	$5.70	$5.00	$5.04	$3.84	$4.73	$4.71
Number of departments bought in per buying-visit	1.1	1.3	1.1	1.2	1.2	1.2	1.2
	90 Outside Customers						
Per cent of customers purchasing during month	57.8	64.4	76.7	63.3	65.5	66.7	65.6
Number of buying-visits per customer buying during month	1.6	1.5	1.6	1.9	1.7	1.6	1.7
Average purchase per buying-visit.	$5.78	$8.44	$10.28	$7.35	$4.81	$5.26†	$6.97†
Number of departments bought in per buying-visit	1.3	1.6	1.4	1.2	1.2	1.4	1.4

*As its name implies, a "buying-visit" is a call at the store on a given day during which a non-returned purchase was made by the customer. A buying-visit may involve one or more separate purchases in one or more departments in a single day, even two or more entrances and exits from the store. All purchases made on a given day were entered on the ledger sheet under that day.

†Excluding one very large purchase in home furnishings. If this were included, the average purchase for June would be $12.25, and that for January-June, $8.21.

TABLE 16*

METHOD OF PURCHASE BY ELGIN AND OUTSIDE CUSTOMERS, BY GROUPS OF STORES

Groups of Stores	Cash		Charge		Instalment		Total Answering	
	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number
Women's wear:								
Elgin	41.7	380	47.2	431	11.1	101	100.0	912
Outside	65.5	275	27.8	117	6.7	28	100.0	420
Total purchases	49.2	655	41.1	548	9.7	129	100.0	1,332
Men's wear:								
Elgin	81.8	928	18.2	207	.....	.....	100.0	1,135
Outside	90.9	432	9.1	43	.....	.....	100.0	475
Total purchases	84.5	1,360	15.5	250	.....	.....	100.0	1,610
Shoes:								
Elgin	75.2	567	24.8	187	.....	.....	100.0	754
Outside	87.7	400	12.3	56	.....	.....	100.0	456
Total purchases	79.9	967	20.1	243	.....	.....	100.0	1,210
Furniture:								
Elgin	40.3	146	50.9	184	8.8	32	100.0	362
Outside	42.3	44	43.3	45	14.4	15	100.0	104
Total purchases	40.8	190	49.1	229	10.1	47	100.0	466
Jewelry and silverware:								
Elgin	89.2	141	10.8	17	.....	.....	100.0	158
Outside	93.0	40	7.0	3	.....	.....	100.0	43
Total purchases	90.0	181	10.0	20	.....	.....	100.0	201
Hardware:								
Elgin	80.4	733	19.3	176	0.3	3	100.0	912
Outside	67.1	51	32.9	25	.....	.....	100.0	76
Total purchases	79.4	784	20.3	201	0.3	3	100.0	988
Miscellaneous:								
Elgin	68.7	1,154	31.3	525	.....	.....	100.0	1,679
Outside	75.4	288	24.6	94	.....	.....	100.0	382
Total purchases	70.0	1,442	30.0	619	.....	.....	100.0	2,061
All groups:								
Elgin	68.5	4,049	29.2	1,727	2.3	136	100.0	5,912
Outside	78.2	1,530	19.6	383	2.2	43	100.0	1,956
Grand total	70.9	5,579	26.8	2,110	2.3	179	100.0	7,868

*Only those transactions for which method of purchase was reported are used in this table.

TABLE 17

FREQUENCY OF OUT-OF-TOWN SHOPPING BY OUTSIDE CUSTOMERS SHOPPING IN ELGIN

Frequency	Elgin xx* Customers		Elgin x* Customers		Total	
	Per Cent Respondents	Number	Per Cent Respondents	Number	Per Cent Respondents	Number
Twice a week.....	6.0	5	4.2	6	4.8	11
Once a week.....	22.6	19	15.3	22	18.0	41
Every two weeks.....	22.6	19	20.1	29	21.1	48
Once a month.....	22.6	19	37.5	54	32.0	73
Few times a year.....	26.2	22	22.9	33	24.1	55
Total.....	100.0	84	100.0	144	100.0	228
No answers.....		1		6		7
Total Elgin customers..		85		150		235

*"xx" includes respondents reporting Elgin as their principal shopping center; "x" includes those who shopped there but named another city as their main shopping center.

TABLE 18*

REASONS GIVEN FOR OUT-OF-TOWN SHOPPING BY OUTSIDE CUSTOMERS SHOPPING IN ELGIN

Reason	Elgin xx Customers		Elgin x Customers		Total	
	Per Cent	Number	Per Cent	Number	Per Cent	Number
Better selection.....	87.1	74	91.3	136	89.7	210
Good stores.....	52.9	45	57.0	85	55.6	130
Better prices.....	51.8	44	51.0	76	51.3	120
Visit friends.....	8.2	7	8.0	12	8.1	19
Work there.....	2.4	2	9.4	14	6.8	16
Goods not obtainable in home town.....	9.4	8	4.7	7	6.4	15
Advertising.....	2.4	2	4.7	7	3.8	9
Other reasons.....	2.4	2	3.4	5	3.0	7
Number answering question.....	100.0	85	100.0	149	100.0	234
No answer to question.....	.....	.....	.....	1	.....	1
Total customers..	.....	85	.....	150	.....	235
Total reasons....	.....	184	.....	342	.....	526

*Percentages total to more than 100 as many customers gave more than one reason.

TABLE 19*

CIRCULATION OF ELGIN AND OTHER DAILY NEWSPAPERS, BY TOWNS

(1) Town	(2) Aurora Daily		(3) Rockford Dailies		(4) Waukegan Daily		(5) Chicago Dailies		(6) Elgin Daily		(7) Total Circulation	
	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number
Algonquin	.....	.....	.....	.....	.....	.....	47.5	233	52.5	258	100.0	491
Arlington Heights	.....	.....	.....	.....	.....	.....	100.0	1,978	.....	.....	100.0	1,978
Barrington	.....	.....	.....	.....	.....	.....	93.3	1,570	6.7	113	100.0	1,683
Bartlett	.....	.....	.....	.....	.....	.....	58.6	205	41.4	145	100.0	350
Batavia	54.2	1,285	.....	.....	.....	.....	45.8	1,086	.....	.....	100.0	2,371
Bloomingdale	.....	.....	.....	.....	.....	.....	80.9	93	19.1	22	100.0	115
Burlington	.....	.....	.....	.....	.....	.....	33.6	36	66.4	70	100.0	106
Capron	.....	.....	46.5	86	.....	.....	53.5	99	.....	.....	100.0	185
Carpentersville	.....	.....	.....	.....	.....	.....	37.9	164	62.1	269	100.0	433
Cary	.....	.....	.....	.....	.....	.....	82.7	296	17.3	62	100.0	358
Crystal Lake	.....	.....	.....	.....	.....	.....	73.7	1,321	26.3	472	100.0	1,793
De Kalb	.....	.....	13.4	302	.....	.....	86.6	1,951	.....	.....	100.0	2,253
Dundee	.....	.....	.....	.....	.....	.....	30.8	389	69.2	875	100.0	1,264
Elburn	62.4	212	.....	.....	.....	.....	37.6	128	.....	.....	100.0	340
Fox River Grove	.....	.....	.....	.....	.....	.....	95.5	297	4.5	14	100.0	311
Geneva	28.6	534	.....	.....	.....	.....	69.1	1,290	2.3	43	100.0	1,867
Genoa	.....	.....	25.0	135	.....	.....	47.5	257	27.5	149	100.0	541
Gilberts	.....	.....	.....	.....	.....	.....	22.0	9	78.0	32	100.0	41
Hampshire	.....	.....	7.0	44	.....	.....	24.7	146	68.2	400	100.0	590
Harvard	.....	.....	38.5	564	.....	.....	58.3	854	3.2	48	100.0	1,466
Huntley	.....	.....	.....	.....	.....	.....	23.7	83	76.3	267	100.0	350
Itasca	.....	.....	.....	.....	.....	.....	98.1	216	1.8	4	100.0	220
Lake Zurich	.....	.....	.....	.....	13.7	29	76.4	162	9.9	21	100.0	212
McHenry	.....	.....	4.2	37	.....	.....	84.7	748	11.1	98	100.0	883
Maple Park	30.0	156	.....	.....	.....	.....	63.5	330	6.5	34	100.0	520
Marengo	.....	.....	29.8	313	.....	.....	41.8	440	28.4	299	100.0	1,052
Ontarioville	.....	.....	.....	.....	.....	.....	50.8	32	49.2	31	100.0	63
Palatine	.....	.....	.....	.....	.....	.....	93.1	1,036	6.9	77	100.0	1,113
Pingree Grove	.....	.....	.....	.....	.....	.....	.....	.....	100.0	26	100.0	26
Plato Center	.....	.....	.....	.....	.....	.....	17.5	7	82.5	33	100.0	40
Richmond	.....	.....	15.2	38	.....	.....	62.5	157	22.3	56	100.0	251
Ringwood	.....	.....	.....	.....	.....	.....	81.3	143	19.7	33	100.0	176
Roselle	.....	.....	.....	.....	.....	.....	73.0	270	27.0	100	100.0	370
St. Charles	24.0	608	.....	.....	.....	.....	61.4	1,556	14.6	370	100.0	2,534
South Elgin†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sycamore	.....	.....	1.0	11	.....	.....	99.0	1,107	.....	.....	100.0	1,118
Union	.....	.....	16.7	28	.....	.....	25.0	42	58.3	98	100.0	168
Wasco	.....	.....	.....	.....	.....	.....	57.8	37	42.2	27	100.0	64
Wayne	.....	.....	.....	.....	.....	.....	53.7	44	46.3	38	100.0	82
West Chicago	7.1	99	.....	.....	.....	.....	85.9	1,194	7.0	97	100.0	1,390
Wheaton	1.4	41	.....	.....	.....	.....	98.1	2,889	0.5	14	100.0	2,944
Woodstock	.....	.....	11.8	284	.....	.....	69.2	1,668	19.0	457	100.0	2,409
Total	8.5	2,935	5.3	1,842	0.1	29	71.2	24,563	14.9	5,152	100.0	34,521

*Sources: col. 2: Illinois Second Largest Market (Copley Newspapers, 1937)--circulations given include carrier and R.F.D. (mail) copies as of September 1, 1936; col. 3: combined daily total of Rockford Morning Star and Rockford Register-Republic, carrier, dealer and mail as of March 17, 1937 (Audit Bureau of Circulations, Audit Report); col. 4: carrier dealer and mail total as of March 27, 1937 (ibid.); col. 5: combined dealer, motor route, and mail total for following papers as of March 30, 1937--Chicago Daily News, Chicago Daily Times, Chicago Evening American, Chicago Herald and Examiner, Chicago Tribune (ibid.); col. 6: same as col. 2; col. 7: computed by author.

†South Elgin is not listed separately in sources.

TABLE 20*

PURCHASES IN ELGIN PER THOUSAND ESTIMATED POPULATION, BY DISTANCE ZONES

(1) Zone	(2) Estimated Post-Office Population	(3) Purchases	(4) Purchases per 1,000 Estimated Population
Elgin R.F.D.	5,168	327	63.3
I. (0-5 miles excluding Elgin R.F.D.)..	5,244	337	64.3
II. (6-10 miles).....	9,507	334	35.1
III. (11-15 miles).....	29,549	557	18.9
Total Elgin R.F.D. and Zones I-III.....	49,468	1,555	31.4
IV. (16-20 miles).....	18,603	202	10.9
V. (21-25 miles).....	20,453	81	4.0
VI. (26 miles and over)	35,937	113	3.1
IV-VI. (16 miles and over).....	74,993	396	5.3
Total.....	124,461	1,951	15.7

*Data in Table 20 were grouped in accordance with highway distance of towns from Elgin. Col. 4 was computed by dividing col. 3 by col. 2.

TABLE 21*

PURCHASES PER THOUSAND ESTIMATED POST-OFFICE POPULATION, BY POPULATION GROUPS

Town-Population Group	Number of Towns	Purchases	Estimated Post-Office Population	Purchases per 1,000 Post-Office Population
	Five Groups			
499 and under....	13	150	6,753	22.2
500-999.....	11	407	13,568	30.0
1,000-2,499.....	5	145	16,168	9.0
2,500-4,999.....	8	655	41,912	15.6
5,000 and over...	5	267	40,916	0.7
Total.....	42	1,624	119,317	13.6
	Three Groups			
999 and under....	24	557	20,321	27.4
1,000-4999.....	13	800	58,080	13.8
5,000 and over...	5	267	40,916	0.7
Total.....	42	1,624	119,317	13.6

*Towns are grouped on basis of town population, excluding R.F.D. in each case. Source: Table 1. Elgin R.F.D. is omitted, also 166 other purchases. See p. 28, n. 2.

TABLE 22*

PURCHASES IN ELGIN AND PERCENTAGE OF TOLL CALLS MADE TO ELGIN FOR CERTAIN TELEPHONE EXCHANGES

Towns	Purchases in Elgin per 1,000 Estimated Post-Office Population	Percentage of Elgin Calls to Total
Algonquin	53.5	67.1
Barrington	31.7	50.9
Bartlett	57.3	77.0
Bloomingdale, Roselle	19.7	32.8
Burlington, Hampshire	41.0	82.2
Carpentersville, Gilberts, Dundee	67.5	84.0
Cary, Fox River Grove	19.0	36.9
Elburn	10.7	28.5
Harvard	1.2	14.7
Huntley	47.8	88.1
Itasca	26.9	13.8
Lake Zurich	43.5	17.9
McHenry	2.1	17.7
Maple Park	3.3	20.9
Marengo	5.7	16.4
Palatine	32.0	16.6
West Chicago	9.6	34.1
Wheaton	1.1	12.2
Total	473.6	711.8

*Purchases per thousand are from Table 1 except where combinations were necessary. The Illinois Bell Telephone Company in August, 1937, supplied data on calls from exchanges listed to Chicago, Aurora, Elgin, Rockford, and Waukegan during twenty business days in May, 1937. The author computed percentage of calls to Elgin to total in each instance.

TABLE 23

COMMODITIES BOUGHT OUT OF TOWN BY OUTSIDE CONSUMERS WHO SHOP IN ELGIN

Commodity	Elgin xx Customers		Elgin x Customers		Total	
	Per Cent Respondents	Number	Per Cent Respondents	Number	Per Cent Respondents	Number
Women's wear	97.6	83	95.3	142	96.2	225
Women's shoes	84.7	72	81.9	122	82.9	194
Men's wear	76.5	65	74.5	111	75.2	176
Hosiery and lingerie	67.1	57	59.1	88	62.0	145
Men's shoes	61.2	52	57.0	85	58.5	137
Furniture	56.5	48	54.4	81	55.1	129
Rugs and drapes	54.1	46	49.7	74	51.3	120
Children's clothing	52.9	45	38.9	58	44.0	103
Drugs	27.1	23	24.2	36	25.2	59
Food	30.6	26	21.5	32	24.8	58
Jewelry and silverware	17.6	15	27.5	41	23.9	56
Books	2.4	2	1.3	2	1.7	4
Hardware	.....	.....	2.0	3	1.3	3
Other commodities	4.7	4	6.0	9	5.6	13
Number answering question	100.0	85	100.0	149	100.0	234
No answer to question	.....	.....	.....	1	.....	1
Total shopping in Elgin	.....	85	.....	150	.....	235

TABLE 24

FREQUENCY OF OUT-OF-TOWN SHOPPING
BY CHICAGO CUSTOMERS

Frequency	Families	
	Per Cent	Number
Twice a week.....	6.9	10
Once a week.....	10.3	15
Every two weeks.....	17.3	25
Once a month.....	33.8	49
Few times a year.....	31.7	46
Total answering.....	100.0	145
No answer.....	.....	2
Total.....	.....	147

TABLE 25

REASONS GIVEN FOR OUT-OF-TOWN SHOPPING BY
FAMILIES SHOPPING MAINLY IN CHICAGO

Reason	Families	
	Per Cent	Number
Better selection.....	94.5	138
Better prices.....	50.7	74
Good stores.....	49.3	72
Work there.....	11.0	16
Advertising.....	4.8	7
Visit friends.....	4.1	6
Other reasons.....	4.8	7
Total answering.....	.....	146
No answer.....	.....	1
Total.....	.....	147

TABLE 26*

CHICAGO DEPARTMENT-STORE CHARGE ACCOUNTS AND PERCENTAGE OF TOLL CALLS MADE TO CHICAGO FOR CERTAIN TELEPHONE EXCHANGES

Exchange	Chicago Charge Accounts per 1,000 Estimated Post-Office Population	Percentage of Chicago Calls to Total
Algonquin	22.0	32.9
Barrington	102.6	49.1
Bartlett	20.5	23.0
Bloomingdale, Roselle	12.0	66.2
Burlington, Hampshire	4.4	17.8
Carpentersville, Gilberts, Dundee	23.8	16.0
Cary, Fox River Grove	39.4	63.1
Elburn	24.1	27.3
Huntley	10.1	10.0
Itasca	86.0	86.2
Lake Zurich	78.8	71.2
McHenry	30.4	70.6
Maple Park	4.6	42.6
Marengo	23.2	43.3
Palatine	37.9	83.4
Wauconda	43.3	68.2
West Chicago	49.9	35.2
Woodstock	52.0	55.9
Total	665.0	862.0

*Accounts per thousand population are from Table 8 except where combinations were necessary because of data on calls. The author computed percentage of calls from information supplied by the Illinois Bell Telephone Co., August, 1937. Calls from exchanges listed to Chicago, Aurora, Elgin, Rockford, and Waukegan during twenty business days in May, 1937, were totaled and percentage of calls to Chicago computed.

TABLE 27*

NUMBER OF TOWNS SHOPPED IN
PER ELGIN FAMILY

Number of Towns	Families	
	Per Cent	Number
One.....	54.7	123
Two.....	40.0	90
Three.....	4.4	10
Four.....	0.9	2
Total shoppers	100.0	225

*Excluding purchases of automobiles only and amusements only.

TABLE 28

FREQUENCY OF OUT-OF-TOWN SHOPPING BY ELGIN FAMILIES
BY TOWNS SHOPPED IN

Frequency	Chicago		Oak Park		Other Towns*	
	Per Cent	Number	Per Cent	Number	Per Cent	Number
More than once a week	3.6	7	1.0	1	8.0	2
Once a week.....	1.6	3	2.1	2	.....	.....
Twice a month.....	5.7	11	5.1	5	20.0	5
Once a month.....	11.5	22	10.2	10	12.0	3
Three or four times a year.....	40.6	78	46.9	46	28.0	7
Less frequently.....	37.0	71	34.7	34	32.0	8
Total answering..	100.0	192	100.0	98	100.0	25
No answer.....	.....	9	.....	4	.....	13
Total families shopping in towns named....	.....	201	.....	102	.....	38

*Includes Evanston, Ill.

TABLE 29*

REASONS GIVEN BY ELGIN FAMILIES FOR BUYING OUT OF TOWN, BY TOWNS SHOPPED IN

Reasons	Families Shopping in Chicago		Families Shopping in Oak Park		Families Shopping in Other Towns†	
	Per Cent	Number	Per Cent	Number	Per Cent	Number
Better selection.....	79.6	144	81.1	77	40.7	11
Social trip.....	38.7	70	32.6	31	92.6	25
Better prices.....	36.5	66	33.7	32	29.6	8
Business trip.....	14.9	27	10.5	10	18.5	5
Better quality.....	11.0	20	7.4	7	14.8	4
More convenient.....	5.5	10	2.1	2	3.7	1
Total answering question.....	100.0	181	100.0	95	100.0	27
No answer on reason....	.....	20	.....	7	.....	11
Number shopping in town (Table 9).....	.....	201	.....	102	.....	38

*In each town number of families shopping in that town who gave reason(s) for so doing is used as base. Percentages total more than 100 because many families gave more than one reason.

†Including Evanston, Ill.

TABLE 30*

SHOPPING HABITS OF ELGIN FAMILIES
BY INCOME GROUPS

Shopping Habits	Above Average Income		Average and Below Average Income		No Answer on Income†	Total	
	Per Cent	Number	Per Cent	Number	Number	Per Cent	Number
Do shop out of town.....	73.5	108	42.4	112	5	54.1	225
Do not shop out of town.....	26.5	39	57.6	152	.....	45.9	191
Total families.	100.0	147	100.0	264	5	100.0	416

*Income grouping by author on basis of indirect evidence (see chap. 1).

†"No Answer on Income" indicates lack of such evidence in questionnaires.

TABLE 31*

SHOPPING HABITS OF ELGIN FAMILIES, BY READING
OF CHICAGO DAILY NEWSPAPERS

Shopping Habits	Read No Chicago Paper Regularly		Read One or More Chicago Papers Regularly		Total	
	Per Cent	Number	Per Cent	Number	Per Cent	Number
Do shop out of town.....	27.6	68	66.7	152	53.8	220
Do not shop out of town.....	72.4	113	33.4	76	46.2	189
Total families..	100.0	181	100.0	228	100.0	409

*Seven families did not answer on newspaper reading.

TABLE 32*

MEANS OF TRANSPORTATION USED BY ELGIN FAMILIES
FOR OUT-OF-TOWN SHOPPING

Means of Transportation	Non-car Owners		Car Owners		Total	
	Per Cent Respondents	Number	Per Cent Respondents	Number	Per Cent Respondents	Number
Own car.....	.....	.....	90.34	159	71.30	159
Bus.....	8.51	4	3.41	6	4.48	10
Electric railway...	61.70	29	26.14	46	33.63	75
Steam railway.....	14.89	7	10.80	19	11.66	26
Drive with friends.	72.34	34	21.60	38	32.29	72
Total answering	100.00	47	100.00	176	100.00	223
No answer.....	.....	1	.....	.....	.....	.....
Total shoppers.	....	48	.....	176	.....	224

*One shopper did not answer on car ownership. Of the 223 answering, 128, or 57.4 per cent, reported one means of transportation; 74, or 33.2 per cent, reported two; and 21, or 9.4 per cent, reported three.

TABLE 33*

SHOPPING HABITS OF ELGIN RESIDENTS, BY OCCUPATION

Occupation	Do Shop Out of Town		Do Not Shop Out of Town		Total Gainfully Employed	
	Per Cent	Number	Per Cent	Number	Per Cent	Number
Skilled labor	50.0	70	50.0	70	100.0	140
General labor	28.8	21	71.2	52	100.0	73
Professional work	75.4	49	24.6	16	100.0	65
Office work	74.0	37	26.0	13	100.0	50
Own business	50.0	21	50.0	21	100.0	42
Executive	72.7	24	27.3	9	100.0	33
Outside saleswork	41.7	10	58.3	14	100.0	24
Inside saleswork	43.5	10	56.5	13	100.0	23
Other	.....	11	.....	7	.....	18
W.P.A.	.....	3	.....	7	.....	10
Total	.....	256	.....	222	.....	478
No answer on occupation.	.....	38	.....	23	.....	61
Total gainfully employed†	53.6	294	46.4	245	100.0	539
No gainfully employed person or family	.....	7	.....	8	.....	15

*Table 33 is based upon assumption that all gainfully employed persons in each family do or do not shop outside Elgin according to answer for family as a unit.

†Percentages of shoppers and non-shoppers do not agree exactly with those given on page 85 for reason given above.

TABLE 34

PLACE OF RESIDENCE OF OUTSIDE RESPONDENTS
BY SHOPPING STATUS

Town	Shop in Elgin	Do Not Shop in Elgin	Do Not Shop Out of Town	Total Replies	Total Questionnaires Mailed
Algonquin	7	.....	.....	7	57
Barrington	30	6	.....	36	210
Bartlett	4	.....	.....	4	36
Batavia	4	20	3	27	247
Bloomingdale	.....	1	.....	1	13
Carpentersville	4	1	.....	5	58
Cary	4	1	.....	5	29
Crystal Lake	16	7	.....	23	224
Dundee	14	.....	.....	14	120
Elburn	6	7	.....	13	56
Fox River Grove	3	.....	.....	3	25
Geneva	13	12	.....	25	181
Genoa	5	1	.....	6	78
Gilberts	1	.....	.....	1	5
Hampshire	9	.....	.....	9	98
Harvard	1	16	5	22	223
Huntley	4	1	.....	5	54
Itasca	1	1	.....	2	24
Kingston	.....	1	.....	1	45
Lake Zurich	2	2	.....	4	14
McHenry	6	3	.....	9	166
Maple Park	.....	4	.....	4	86
Marengo	10	4	2	16	166
Ontarioville	1	.....	.....	1	6
Palatine	7	7	.....	14	168
Ridgefield	1	.....	.....	1	9
Roselle	5	.....	.....	5	69
St. Charles	17	7	1	25	225
South Elgin	.....	1	.....	1	29
Sycamore	4	19	3	26	225
Union	1	.....	.....	1	31
Wauconda	1	2	.....	3	22
Wayne	1	.....	.....	1	9
West Chicago	13	8	.....	21	221
Wheaton	10	46	.....	56	363
Woodstock	25	11	2	38	329
Total	230	189	16	435	3,960
No answer	5	.....	.....	5	40*
Total replies	235	189	16	440	4,000

*The remaining forty cards were sent to Burlington, Plato Center, Pingree Grove, and Wasco, from which towns no replies were received.

TABLE 35*

OTHER TOWNS SHOPPED IN BY OUTSIDE CONSUMERS WHO SHOP IN ELGIN

Town	Families	
	Per Cent	Number
Chicago:		
xx	25.1	59
x	47.2	111
Total	72.3	170
Aurora:		
xx	3.0	7
x	19.6	46
Total	22.6	53
Rockford	12.3	29
Evanston	10.6	25
Oak Park	8.9	21
Waukegan	3.8	9
De Kalb	3.4	8
Geneva	2.6	6
Woodstock	2.6	6
Others (18 towns)	11.5	32
Families shopping in Elgin	100.0	235

*Percentages do not total 100 as most families shopping in Elgin shopped in other towns besides their home town in addition to Elgin.

TABLE 36

TOWNS SHOPPED IN BY OUTSIDE CONSUMERS
BY ZONES OF RESIDENCE

Town	Primary Area		Competitive Area		Total	
	Per Cent	Number	Per Cent	Number	Per Cent	Number
Chicago:						
xx	25.3	37	35.2	96	31.7	133
x	48.6	71	43.2	118	45.1	189
Total	73.9	108	78.4	214	76.8	322
Elgin:						
xx	39.7	58	9.2	25	19.8	83
x	43.1	63	30.8	84	35.1	147
Total	82.8	121	40.0	109	54.9	230
Aurora:						
xx	1.4	2	9.5	26	6.7	28
x	11.0	16	21.2	58	17.7	74
Total	12.4	18	30.7	84	24.4	102
Rockford	2.1	3	18.3	50	12.6	53
Oak Park	8.9	13	13.6	37	11.9	50
Evanston	8.9	13	8.4	23	8.6	36
De Kalb	0.7	1	9.5	26	6.4	27
Woodstock	4.1	6	2.6	7	3.1	13
Waukegan	2.1	3	4.4	12	3.6	15
Others	15.1	22	21.6	59	19.3	81
Families shopping	100.0	146	100.0	273	100.0	419*

*Percentages total more than 100 as many families shop in more than one town.

TRADE TERRITORY SURVEY

Use separate ticket for each customer

Check Day on which Sale is Made

3 Mon. | Tues. | Wed. | Thurs. | Fri. | Sat.

Check One

4 Cash | Charge | Instal.

5-6-7-8-9 Amt. of Purchase $_____

Write Customer's Home City Here

_____

10-11 _____ RFD ☐ 12

_____ Town ☐

Leave above space blank if customer lives in Elgin

13-14 Check below kind of goods bought

Check only ONE classification on a ticket

1. ☐ Auto Tires and Tubes
2. ☐ Auto Accessories and Parts, other
3. ☐ Children's Clothing
4. ☐ Children's Shoes
5. ☐ Elec. Appl., lge. (refrig., radios, washers)
6. ☐ Elec. Appl., sml. (toasters, irons, lamps)
7. ☐ Floor Coverings and Drapes
8. ☐ Furniture
9. ☐ Hardware
10. ☐ Jewelry and Silverware
11. ☐ Men's Clothing
12. ☐ Men's Furnishings
13. ☐ Men's Dress Shoes
14. ☐ Men's Work Shoes
15. ☐ Piece Goods
16. ☐ Toilet Goods and Cosmetics
17. ☐ Women's Apparel (coats, suits, dresses)
18. ☐ Women's Hosiery and Lingerie
19. ☐ Women's Shoes

SEND TICKETS TO THE OFFICE

Place Store Stamp on Back of this Slip

RETAIL TRADE SURVEY

1. In what other towns besides your home town do you shop? (Place two X's after town in which you shop the most.) None____ Chicago____ Elgin____ Evanston_____ Rockford_____ Waukegan_____ Aurora_____ Others_____.
(Fill in, please)
2. What items do you buy out of town? Women's wear_____ Men's wear_____ Children's Clothing_____ Furniture_____ Rugs & Drapes_____ Women's Shoes_____ Men's Shoes_____ Jewelry and Silverware_____ Drugs___ Food_____ Hosiery & Lingerie_____ Others_____
(Fill in, please)
3. Do you buy from mail order houses? Yes_____ No_____
4. About how often do you shop out of town? Twice a week_____ Once a week_____ Every two weeks_____ Once a month_____ Few times a year_____ Never_____.
5. Do you shop out of town most frequently in: Summer_____ Autumn_____ Winter_____ Spring_____; About the same all seasons_____.
6. Why do you shop out of town? (Place two X's after most important reason.) Advertising_____ Work there_____ Visit Friends_____ Good stores_____ Better prices_____ Better selection_____ Other_____
(Please fill in)

Home Town_____ R.F.D._____ Town_____

ELGIN TRADE SURVEY

Approved by the Elgin PTA Council

With the cooperation of the Elgin Parent-Teacher Associations, many Elgin merchants, the Elgin Association of Commerce and the Elgin newspapers a survey is being conducted of the buying habits of the people of Elgin.

Your assistance in carefully answering the following questions will be helpful to the merchants of Elgin, the other cooperating organizations and the investigator. You will also be helping your PTA to try to win one of the four cash prizes announced. Please turn this questionnaire in to the president of your PTA within one week after the meeting. Only one blank should be filled in by each family. YOU ARE NOT ASKED TO SIGN THIS BLANK, so PLEASE BE FRANK, ACCURATE and CAREFUL in answering all questions. All questions must be answered if this form is to count in the contest. Please DO fill in the space indicating in which block you live, so that the extent of the coverage of the city can be estimated. Thank you for your cooperation.

Eaton V. W. Read

1. Which PTA should receive credit for this questionnaire?_____

2. Do you ever shop out of town? Yes_____ No_____

3. If so, in what towns do you shop? Chicago__ Evanston__ Oak Park__

Other towns_____

(Please write in name of other towns.)

4. Where do you and your family buy the following commodities and services? (If you buy a certain commodity in more than one town please indicate the order of dollars spent during the last twelve months, May 1936-April 1937.)

Example

Women's Apparel Elgin 1 Chgo. 3 Oak Pk. 2 Evanston 0 Other towns St. Chas. 4 Mail Ord. 0

(Please answer this question frankly, completely and carefully for all items, a-t, as it is most important and must be answered in full to qualify this blank for the contest.)

	Elgin	Chgo.	Oak Pk.	Evanston	Other towns (Write in)	Mail Ord.
a. Women's Apparel (Hats, coats, suits, dresses.)						
b. Women's Accessories (Hosiery, underwear, etc.)						
c. Women's Shoes.						
d. Children's clothing.						
e. Men's Clothing.						
f. Men's Furnishings (shirts, ties, socks, etc.)						
g. Men's Shoes.						
h. Dry Goods (Piece Goods.)						
i. Furniture.						
j. Floor Coverings and drapes.						
k. Jewelry and silverware.						
l. Toilet Goods and cosmetics.						
m. Drugs.						
n. Groceries and meats.						
o. Hardware.						
p. Large elec. items (Refrigerators, radios.)						
q. Small elec. items (Irons, toasters, lamps, etc.)						
r. Automobiles (Place of Last purchase)						
s. Auto accessories and parts.						
t. Amusements (Stage plays and movies)						

5. Why do you buy in the various towns named in questions 3 and 4? (Check one or more reasons for each town in which you shop.)

	More Convenient	Better Prices	Better Selection	Better Quality	Go there anyway Social Trip	Business Trip	Other Reasons Fill in
a. Elgin							
b. Chicago							
c. Oak Park							
d. Evanston							
e. _____ Other town							
f. _____ Other town							

6. If you buy through mail order houses, why do you do so?_____

_____

7. About how often do you shop out of town? (Check one for each town)

	More than once a Week	Once a Week	Twice a Month	Once a Month	3-4 Times per Year	Less frequently	Never
a. Chicago							
b. Evanston							
c. Oak Park							
d. _____ Other town							
e. _____ Other town							

8. About how often do you buy through mail order houses?_____

9. About what proportion of the dollars you spend on items a-t in question 4 do you spend out of town? (Please try to estimate on basis of dollars spent May 1936-April 1937 on all of those items and check one space below.)

a. Less than one tenth (0-10%)_____
b. One tenth to one quarter (11-25%)_____
c. One quarter to one half (26-50%)_____
d. One half to three quarters (51-75%)_____
e. Over three quarters (76-100%)_____

10. Which of the following newspapers do you read regularly? (Check one or more.)

Chicago Daily American ___
Chicago Daily Examiner ___
Chicago Daily News ___
Chicago Daily Times ___
Chicago Daily Tribune ___
Elgin Courier-News ___
Other Papers _____
(Please fill in)

Chicago Sunday Examiner ___
Chicago Sunday Times ___
Chicago Sunday Tribune ___

11. Do you have an automobile? Yes ___ No ___

a. If so, what kind is it?_____ What year?_____
b. Is it available for your use in shopping? Yes ___ No ____
Occasionally____

12. What means of transportation do you use when you go out of town to shop? (Check one or more.)

a. Own car ____
b. Bus ____
c. Electric line ____
d. Steam railway ____
e. Drive with friends ____

13. If you have a charge account or accounts in any of the following towns, please put number of accounts after name of town. Put 0 after towns where you have no accounts.

a. Elgin___ b. Chicago___ c. Evanston___ d. Oak Park___
e. Other towns_____ _____ _____ _____
(Please fill in name of town and number of accounts)

14. Has your out-of-town shopping increased, decreased or remained about the same in the past three years, 1934-1936?
Increased_____ Decreased_____ Same_____

15. If the percentage of goods you and your family buy out of town has changed in the past three years, please write a few words telling in what commodities and why.

_____

_____

_____

_____

_____

16. In what block do you live? ____ block on No.So.E.W._____ street avenue
(Example: 400 block on No. Hill)

Do not fill in exact address but please give number in hundreds of the block and the name of the street. E.g. if you live at 540 S. State St. fill in 500 block, underline So., and fill in State.

17. How many are there in your family? ___adults ___ children 15 yrs. and under.

18. How many in your family are employed? None___One___Two___Three___ More___

19. What are the occupations of those employed?

____Office work
____Inside saleswork
____Own business
____Professional work
____W. P. A.
____General labor
____Skilled labor
____Outside saleswork
____Executive
Other work_____
(Please fill in)

20. Where do they work?

a. Elgin____
b. Chicago____
c. Other towns_____
(Please fill in)